FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 27—Number 4 | JANUARY 22, 1955 | 1 Year $4, 2 Years $7

Special Alfalfa Section in This Issue

The alfalfa dehydrating industry and the convention of the American Dehydrators Assn. Jan. 26-29 receive detailed attention in this issue of Feedstuffs. A special section will be found on the pages following page 36. Contents include:

Pricing Dehydrated Alfalfa 2a
Artificially Dehydrated Alfalfa in Dairy Cattle Rations 4a
Alfalfa Dehydrating Revolutionized 10a
How Non-Oxidizing Dehydrated Alfalfa Storage Works 12a
Adding Fats and Oils to Alfalfa Meal 13a
Antioxidants for Preservation of Carotene 16a
Dehydrated Alfalfa Meal in Nutrition 22a
Research on Alfalfa 30a
A Rich Source of Pigmentation Factors for Poultry Feeds 54
Pelleting of Dehydrated Alfalfa 56

A talk, "Virtues and Vices of Dehydrated Alfalfa," which will be delivered by Dr. H. S. Wilgus, Peter Hand Foundation, Chicago, Jan. 29 at the ADA convention, will be printed in next week's Feedstuffs, together with other convention highlights.

Number of Cattle on Feed on Jan. 1 Shows Increase of 8%

WASHINGTON — The number of cattle and calves on feed in the U.S. on Jan. 1 was 8% larger than a year ago, according to the U.S. Department of Agriculture. The estimated number was 5,816,000 head, compared with 5,394,000 head last year and the 1949-53 average of 4,893,000 head.

The number on feed in the north central states was 4% above a year ago. In the 13 western states it was up 22%.

The Corn Belt total on Jan. 1 was estimated at 4,205,000 head — the second highest on record. The peak number was 4,442,000 on Jan. 1, 1953. Both the eastern Corn Belt and the western Corn Belt were each 4% above a year earlier. Iowa, the leading feeding state, showed a 6% increase, while Nebraska, the second ranking feeding state, was up 2%. Illinois was up 5%. All other north central states showed the same or more cattle on feed than a year ago, except North Dakota, which was down 8%.

Shipments of stocker and feeder cattle during December into the nine Corn Belt states for which state inspection records are available were 24% larger than in December a year earlier. For the July-December period, inshipments were 20% larger than for the corresponding period a year earlier.

Outside the north central states, the number of cattle on feed was considerably larger than a year earlier. California and Colorado, the important feeding states in the West, showed increases of 33% and 12%, respectively. All other areas of the West showed increases ranging from 7 to 69%, except Wyoming, where numbers were down 14%. Pennsylvania and Texas were each down 2%.

Selected States

The USDA report includes detailed information on cattle on feed in certain states. And in five of these states—Illinois, Iowa, Nebraska, Idaho and California—similar data are available for 1954.

This information shows that in the five states, a larger proportion of light weight cattle was on feed Jan. 1 than a year earlier, with 76% weighing less than 900 lb. compared with 74% last year. Cattle weighing over 900 lb. accounted for 24% of the total this year, compared with 26% a year earlier.

The five states showed a consider-

(Continued on page 61)

FEEDSTUFFS FEATURES

Recent Advances in the Nutrition of Hens 29
Knock on Every Door in 1955 ... 43
Joe Brooks.. 23 New Products.. 48
Putting Feed Research to Work.. 18
Convention Calendar 46
Feed Service Bulletin Board 50
Classified Ads 58
Feed Markets in Detail 62
Index of Advertisers 67

CSS Aims for $2 Bu. Supports on Soybeans, No Cottonseed Props

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Commodity Stabilization Service officials now contemplate the following price support levels for the oilseed crops for the coming year:

Soybeans—at a national average farm support price of $2 bu.

Flaxseed—at a national farm average farm support price of $3 bu.

Cottonseed—there will be no support for cottonseed or cottonseed products.

When this decision is formally announced by CSS—probably not before the end of this month—the feed industry will have the complete pattern of the government influence in the feed market this year, except for such undertakings as drouth relief or similar types of emergency action.

The small grain supports are already fixed at 70% of parity.

And the above-mentioned oilseed dollars-and-cents support levels constitute a reduction from the current percentage-of-parity support for these crops.

The exact percent of parity of the new support levels cannot be accurately reported until issuance of the January agricultural prices report due at the end of this month. However, it is now known that there will be a recalculation of the soybean parity price, which can advance between 6 and 8¢ bu. as this parity price is brought under the 10-year moving price base for agricultural commodities.

Considered Adequate

At any rate, the absolute price levels of supports for soybeans and flaxseed have been determined without official eyes glued to any parity percentage concept. After discussions with producers and processing interests for these crops, it was concluded that $2 bu. target for beans was adequate and the $3 level for flax would be in line with the end products of those crops and at the same time keep production in line with the small grain crops, yet not effect too broad an expansion in the acreage taken out of production of wheat and cotton.

Following a session here this week between CSS officials and trade and producer representatives, the above levels of support were seen to be equitable, adequate and satisfactory to the divergent interests.

(Continued on page 61)

CSS Offers Dry Milk for Feed At Reduced Price

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The Commodity Stabilization Service this week made available up to 10 million pounds of roller process non-fat dried milk solids for poultry and dairy feed use at a delivered price ranging by states from 11½ to 12½¢ lb.

The CSS terms of sale generally follow the conditions imposed on feed use of its dried milk in last year's special program, but in this new arrangement it is required that purchases of this product at the reduced price level be incorporated into feeds within 60 days. Otherwise, the purchaser will be faced with a penalty by CSS, being required to pay the difference between the reduced price

(Continued on page 65)

Growers Plan 4% Cut in Turkey Crop

WASHINGTON — Turkey growers plan to decrease turkey numbers in the U.S. in 1955 by 4%, according to the U.S. Department of Agriculture.

Based on growers' reporting of intentions in early January, the number of heavy breed birds raised would be about the same as in 1954, while production of light breed birds would show an 11% decrease from 1954.

The record turkey crop in 1954, with considerably lower turkey prices and less favorable turkey-feed price relationships than a year earlier, is the reason given by growers for the expected decrease in production.

(Also see story on poultry situation on page 8.)

If growers carry out their intentions, the total number of turkeys raised in 1955 will be 58,896,000, compared with 61,045,000 raised last year.

According to the report, growers in all parts of the country plan decreases except the north central states. The west north central expects an increase of 3%, while the east north central plans no change.

Growers intend to raise 42,820,000 bronze and other heavy breed turkeys this year, about the same as last year. They plan to raise 16,076,000 Beltsville white and other light breed birds—11% less than in 1954.

About 27% of all the turkeys to be raised this year are expected to be light breed birds, compared with 30% in 1954.

The turkey intentions situation varies by areas. For example, reflecting the poor price situation in 1954, almost all areas expect to decrease production of heavy breed birds in 1955 to at least some extent.

On the other hand, a 14% increase in heavy breed turkeys is indicated in the west north central states, and this would offset declines elsewhere.

However, in at least some parts of the west north central states the indicated increase in heavy breed production is a result of a switch in method of operations. For example, it is pointed out that in Minnesota, a major turkey state, the intended expansion of heavy breed production is due mainly to a change by many growers from light breeds to the broad white varieties, which can be grown out to a heavy weight or sold at an earlier age for the broiler trade. In Minnesota, according to the plans, only 36% of this year's produc-

(Continued on page 61)

★ FEEDSTUFFS ★

A Weekly Newspaper Published by
THE MILLER PUBLISHING CO.
2501 WAYZATA BLVD., MINNEAPOLIS, MINN.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)
(Telephone: Main 0575. All Offices Serviced by Bell System Teletype)

EDITORIAL STAFF—Harvey E. Yantis, Editor; Milton B. Kihlstrum, Managing Editor; Martin E. Newell, Paul L. Dittemore, Associate Editors; Roger Bergland, News Editor; George L. Gates, Market Editor; Frank W. Cooley, Jr., Emmet J. Hoffman, Editorial Assistants; L. R. McDonald, Research Director.

WASHINGTON REPRESENTATIVE—John Clipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

BUSINESS STAFF—Carroll K. Michener, Chairman of the Board of Directors; H. J. Pattridge, Honorary Chairman; Harvey E. Yantis, President; Milton B. Kihlstrum, Executive Vice President and Treasurer; Martin E. Newell, Vice President; Don E. Rogers, Vice President; Wilfred E. Lingren, Secretary and Advertising Sales Director; Thomas A. Griffin, Business Manager; Edwin J. Hartwick, Circulation Manager; James G. Pattridge, Assistant Treasurer; Carl B. Vetter, Advertising Production Manager.

BRANCH OFFICES—SOUTHWEST, Martin E. Newell, Manager, James W. Miller, Assistant Manager, 614 Board of Trade Bldg., Kansas City 5, Mo. (Tel. Victor 1350); EASTERN STATES, George W. Potts, Paul L. Dittemore, Co-Managers, 114 E. 40th St., New York 16, N. Y. (Tel. Murray Hill 3-3763); CENTRAL STATES, Don E. Rogers, Manager, Henry S. French, Assistant Manager, 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782); FOREIGN, George E. Swarbreck, Manager, 901 Lumsden Bldg., Toronto 1, Ont. (Tel. Empire 4-6654).

Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 1, Minn. Single copies 20¢. Subscription rates: One year $4, two years $7, in the U.S., U.S. possessions, Canada and Pan-America. Add $2 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The controlled circulation of this issue is concentrated in the southwestern states

Another Year of Progress

FOR a lot of years Feedstuffs has paid special attention to the alfalfa dehydrating industry by publishing a section devoted to it in the issue before the annual convention of the American Dehydrators Assn.

If you have to form a habit, you might as well adopt a good one.

We haven't changed our mind a bit since we remarked in the Special Alfalfa Section in 1951 that "there are few, if any, other processors of standard feed ingredients who have devoted themselves as wholeheartedly . . . to finding out what they had to sell, how it can best be utilized, and how to improve it. The alfalfa dehydrators have had numerous tough problems in the road of realizing their full potentialities. Not all of the problems have been solved, but some of them have been and substantial progress has been made in others. The same intelligent approach, adequate financial backing, and industry spirit during the next decade should result in even greater progress. The ball is rolling."

We have commented many times on the fact that almost all of the alfalfa meal produced is used in formula feed, and the interests of the two industries are largely identical. As the dehydrators make progress in improving their product and in finding new values for it, feed manufacturers benefit, too. As the formula feed industry expands, the dehydrators also prosper.

★ ★ ★

SINCE 1951, progress has been continuous and the alfalfa dehydrator today has improved his product to meet the needs of the feed manufacturer to such an extent that a processor who had not followed the advances would be left far behind the parade—if, in fact, he was still in it.

Nutrition research on alfalfa has been conducted by the best staffed and equipped stations and laboratories in the country. There has been no other similar study of a single formula feed ingredient in the history of the industry, with the possible exception of the grains, which are less complex and which do not have as wide an array of nutrients as does alfalfa. On the nutrition side, there are still things to be found out, but much is known and all of it points to dehydrated alfalfa as one of the formula feed ingredients to which the adjective "miraculous" can be applied without exaggeration.

A great deal also has been done in field research—in the growing, harvesting and handling of the alfalfa plant. These studies have resulted in increasing uniformity at a desirable level and in reducing costs.

★ ★ ★

UNIFORMITY in content and color, more ease in handling, and a more dependable pattern of availability have been factors suggested by feed manufacturers as needed improvements in the alfalfa processing industry. These have been difficult problems on which to make any progress. Content and color vary with soil, weather, length and methods of storage and other things which are not always under the control of the dehydrator. It also is the nature of dehydrated alfalfa to be bulky and dusty, which makes it unpleasant to handle. Seasonal variations in the sources of raw material caused peaks and valleys both in the quality of the product and in the availability of it.

During the past couple of years, and the past year particularly, it has been in these categories that the most remarkable improvement has been made. Joseph Chrisman, executive vice president of the American Dehydrators Assn., calls it a revolution, and many who know the story will agree.

The most important development has been inert gas storage to preserve the carotene content. Pelleting, granulating and greasing the meal are practices unknown until two or three years ago and which have spread rapidly. These combine to minimize or eliminate virtually all of the objections listed above. Dustiness and bulkiness certainly can now be controlled. Economies can be effected in shipping and handling. Crops still vary because of soil and weather, but storage and blending facilities will make it possible in the future to exercise far more control over uniformity of product and availability.

It is because of these developments that the editorial content of the Special Alfalfa Section of this issue of Feedstuffs emphasizes the physical aspects of production. Nutrition is not neglected, but the really important progress of the past year has been in overcoming the obstacles to the greater use of dehydrated alfalfa meal by the feed manufacturer. It is in the physical aspect of the product that the recent improvement has occurred, and the story of it, we are certain, will interest the alfalfa dehydrating industry and the feed industry alike.

UNCLE TOM'S FEED FABLES

When drinking interferes with my business, I quit business. But it wasn't that way back in the prohibition days. One day two local boys and I loaded ourselves into a Model T to do some resale work selling feeds. I was supposed to show the other boys how.

We got to one farmyard and a weazoned little old Irishman who must have been about 80 years old answered our knock and cordially invited us in. He lived in a shack and first thing he did he opened up the sideboard and down came a jug. Well, in Rome you do as the Romans do so we all had a swig, and then I was ready to go into my sales pitch. The old man interrupted and again reached for the jug—but I stopped him. I said:

"Now just a minute, Mr. O'Connell. Let's take care of this business first, and then we'll take care of the jug." And he says to me, "Now listen to me, lad. If you three boys think for one minute that I'm going to buy a ton of feed for this one damn boar that I've got then all FOUR of us has got to be drunk."

And it all happened just that way, just as sure as you're born. But that was a long time ago in peculiar times and in a particular neighborhood. I wouldn't try to work that way today for two reasons:

First, I couldn't stand up long enough and second, I have learned by long experience that more people don't approve of drinking than do. And even those who will take a drink, don't like to do business with a man that smells like a distillery.

Frankly, I'm one of that last group myself. I'll take it first hand, not off the other guy's breath.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Formula feed business slipped back or remained at recent low levels in all areas of the country except the Northeast, where a moderate improvement was reported. Manufacturers in the Southwest were hit with a sharp slowdown in demand this week. Throughout the country, wary feeders are taking only immediate needs, and dealers likewise are holding inventories to a minimum. Easiness in several ingredients did not help this situation. Millfeed declined, along with oilseed meals and some animal by-products. Alfalfa meal was stronger. The index of wholesale feedstuffs prices as reported by the U.S. Department of Agriculture showed only a minor decline to 222, compared with 237 a year ago in the week ending Jan. 19. The feed grain index fell 2.2 points to 211.5, compared with 217.5 a year ago. Late-week price losses were not reflected in the USDA figures. (Ingredient details on page 62.)

Northwest

Demand for formula feed was steady to lower in the Northwest this week, with volume generally lagging some—and for some manufacturers considerably — below the volume of last January.

The outlook for an early pickup is not too promising, in the opinion of most feed men contacted. At best, a gain in poultry feed sales could follow the recent upturns in egg prices, or considerable snow in range areas could stimulate buying of cattle feed. However, outside of these possibilities, manufacturers look to late February or March for any definite upswing, when starter feed trade should start building up.

One manufacturer had to reduce operations to one shift this week, following a late-week slowdown in orders, but others maintained schedules of 2½ shifts, keeping output steady to somewhat lighter.

Dairy feed and hog feed trade is fair in most instances, although dairy volume is off, also, for some manufacturers. Cattle feed demand, principally for steer fattener feeds, is holding up well.

Egg prices moved up about 3¢ doz.

(Continued on page 66)

Sales Emphasized at Meeting Of Northwest Feed Group

MINNEAPOLIS — Ideal weather, coupled with an attractive program devoted to methods of stimulating sales and learning what is new in animal and poultry nutrition attracted a turnout of approximately 500 persons to the 23rd annual conference of the Northwest Retail Feed Association, Inc., at the Hotel Nicollet, Minneapolis, Jan. 17-18.

Members elected R. M. Serkland, Grain Products Co., St. James, Minn., as the new president, succeeding Eldon Roddis, Roddis Feed Co., Rochester, Minn. Wendell Lenton, Farmers Elevator Co., Stewartville, Minn., was elected vice president, and W. D. Flemming, Grain & Feed Review, Minneapolis, was reelected secretary-treasurer.

Named directors for three-year terms were Willard Houle, E. J. Houle Co., Forest Lake, Minn.; George Koib, Jr., Belgrade (Minn.) Flour Mills Co., and Joseph Welder, Farmers Elevator Co., Blue Earth, Minn. Directors elected for one year were Leo Hager, Lanesboro (Minn.) Grain Co., and Frank Bowles, Northwood (N.D.) Grain, Feed & Hatchery.

Ray Bowden, Grain & Feed Dealers National Assn., speaking briefly following the Jan. 17 luncheon, urged feed dealers to be on alert to proposed congressional changes in the Fair Labor Standards Act seeking to raise minimum wages and exempting feed retailers from certain provisions of it.

The morning of Jan. 17 was devoted to four panel discussions on methods of increasing feed and allied sales. The main luncheon speaker at noon was Karl Rolvaag, lieutenant governor of Minnesota. A pictorial tour of Minnesota feed mills by means of colored slides was taken in the afternoon and in the evening the annual banquet was served to over 300 persons. A floor show concluded the day's formal activities.

Profitable Sidelines

Feed dealers who provide seed cleaning services, fertilizer and farm chemicals round out their services to the farmer-customer. This was the consensus of a panel on "Profitable Sidelines for Feed Merchants" on the morning of Jan. 17. Chairman of the panel was Mr. Lenton, and members were Marvin E. Peterson, Lewiston (Minn.) Elevator Co.; Wayne Jimmerson, Agricultural Services, Inc., Minneapolis, and Harold D. Goeway, Minnesota Farm Bureau Service Co., St. Paul.

Mr. Peterson reviewed how his firm began its seed cleaning, treating and processing business in 1949 and urged other dealers entering this field to consider: 1. Is there a need for it? 2. What is the potential business available? 3. Proximity of other plants. 4. What type and size plant is appropriate. 5. Capacity of machinery. (Remember this is a seasonal business and a farmer's seed must be handled promptly when he requests seed cleaning and treating). 6. Cost of plant and its maintenance. 7. Are wholesale and retail sales expansion possible? and 8. Steps for handling additional customers in your feed store.

Mr. Goeway suggested that fertilizer be treated as more than a sideline by feed dealers because there is a direct relationship between the formula feed business and fertilizer. He stated that animal units on many farms could be doubled if better and proper fertilizer practices were used by those farmers to achieve better efficiency. In other words, he suggested, the average farm can produce more home grown grains with proper fertilization, thereby creating a larger potential for sales for concentrates.

"There are countless times when a farmer walks into my feed store with a $2 seed cleaning order and walks out leaving a $100 check for feeds," pointed out Mr. Lenton. "Seed cleaning facilities have rounded out my business," he added.

Mr. Jimmerson emphasized the increasing importance of weed and insect control chemicals to the farmer, and encouraged dealers to become well acquainted with their properties to make proper recommendations to customers. They present a big sales opportunity but this situation implies responsibilities also, he emphasized. The dealer owes it to his customers to keep well informed so as to become not only a supplier of farm chemicals but also a supplier of information.

The relief provided by the new tax law should be investigated by every dealer, summarized a panel on this topic. Led by Stanley Speltz, Speltz Grain & Coal Co., Albert Lea, Minn., the panel had the following as members: G. E. Nimmer, F. H. Peavey & Co., Minneapolis; L. A. Rapaport, Calmenson, Abramson & Co., St. Paul, and Edwin G. Bird, Bird & Associates, Minneapolis.

Mr. Nimmer emphasized that the new law eases the problem of accumulating earnings by corporations by granting exemptions to all corporations who had not accumulated $60,-

(Continued on page 65)

NEW OFFICERS—R. M. Serkland, Grain Products Co., St. James, Minn., pictured at the left, is conferring on the coming year's activities of the Northwest Retail Feed Assn. with Wendell Lenton, Farmers Elevator Co., Stewartville, Minn., following their election to new offices in that group. Mr. Serkland is the new president and Mr. Lenton is vice president.

Cold Weather Limits Supply of Alfalfa Meal for Blending

KANSAS CITY—Recent, cold wet weather in the California alfalfa producing region has slowed West Coast processing to a halt, and industry sources do not believe that plants in that area will be back in production until near the middle of February. This situation has contributed to a shortage of blending material in the Midwest and some advance in guaranteed 100,000 A dehydrated alfalfa meal prices.

In the past month the spread between no A guarantee meal and 100,000 A on arrival blended dehydrated alfalfa meal has doubled. In the week before Christmas no A meal was selling at $52, sacked, Kansas City, and the guaranteed product at $60. Currently the prices are $52 and $68, respectively.

Earl Hughes New CSS Administrator

WASHINGTON — Ezra Taft Benson, secretary of agriculture, has announced the appointment of Earl M. Hughes of Woodstock, Ill., as administrator of the Commodity Stabilization Service. Mr. Hughes succeeds James A. McConnell, who was recently named assistant secretary of agriculture. (Feedstuffs, Jan. 15.)

Mr. Hughes has been a consultant to the CSS administrator since last fall, working on problems related to price support operations and administration.

He is a graduate of the University of Illinois and has engaged in agricultural production and marketing work during his entire career. Mr. Hughes' farm operations include a dairy farm and production of livestock, grain and seed. He has been active in cooperative farm organization work and in other agricultural organizations for many years.

Meanwhile, acting with unanimity, the Senate Agriculture Committee has cleared the nomination of Mr. McConnell to be assistant secretary of agriculture. Confirmation by the Senate is certain to follow—a result exclusively forecast by Feedstuffs weeks ago.

Serving with Mr. Hughes in CSS, Walter C. Berger will remain as associate director, and keep the reins on feed industry problems.

The Berger retention plus the appointment of Mr. Hughes makes a triumvirate which probable will pave the way for an expansion of the Benson program of a livestock economy and accentuate the basic importance of the feed industry.

Washington State Feed Official Appointed

OLYMPIA, WASH. — Appointment of Dr. John G. Kleyn of Youngstown, Ohio, to head the Washington agriculture department's feed and fertilizer laboratory at Yakima was announced by department director, Sverre Omdahl.

Dr. Kleyn was formerly a research microbiologist with Monsanto Chemical Co. in St. Louis.

Dewey Termohlen Shifted, to Go First to Europe

WASHINGTON—In a major shift of staff officials this week, the U.S. Department of Agriculture announced that the big stabilizing influence in the poultry branch, W. Dewey Termohlen, would be transferred to the Foreign Agricultural Service and assigned to the Far East with headquarters in Tokyo.

Mr. Termohlen in recent years has sat on the hot stove of the broiler, turkey and poultry industries, where expanding production has brought those industries close to a financial precipice. Mr. Termohlen has been a stalwart in opposition to price supporting operations as a bail-out of those industries. He has worked closely with the American Feed Manufacturers Assn. in making public to the poultry groups the market outlook as expressed by the college survey group of the AFMA.

To Go to Europe

Mr. Termohlen, while detached from his old post will, before leaving for Tokyo, go to western European nations with Arlo Turner of the Grange Co., Modesto, Cal., and Homer Huntington formerly of the Poultry and Egg National Board, to explore sales possibilities in western Europe for frozen and canned turkeys and broilers.

Mr. Turner has been in the vanguard of turkey industry leaders to promote sale of U.S. turkey products to European markets. Many physical problems are faced, mainly that of refrigeration of frozen eviscerated turkeys which have become a big market factor in the U.S. However, according to USDA and trade sources, Mr. Turner has a big argument at hand, which is the lower cost of this food from U.S. sources. And if he can determine how to overcome some of the physical handicaps, he may find the opening wedge in a new market.

The fact that the old reliable Homer Huntington has been persuaded to don his old industry harness makes the European jaunt of this trio look optimistic.

Harold Thomas Killed In Iowa Auto Accident

BOONE, IOWA — Harold Thomas, manager of the Farmers Coop. Elevator at Creston, Iowa, and a director of the Farmers Elevator Assn. of Iowa was instantly killed on Jan. 15 when a car in which he was riding overturned near Boone. Driver of the car was Merle Stenges, manager of the Felco plant in Des Moines. Felco is the service company for the Farmers Elevator Assn. of Iowa. Mr. Stenges was seriously injured and is in the hospital in Boone.

The accident occurred when Mr. Stenges turned suddenly to avoid hitting a dog.

Mr. Thomas was 38 years old.

HYMAN REICHERT DIES

MINNEAPOLIS—Hyman Reichert, who had been associated with the American Bag Co., Minneapolis, since 1936, died Jan. 19 while on a plane flying from Spokane to Minneapolis. He was 45 years old and had been a lifelong Minneapolis resident.

Production of Millfeed Shows Increase

Production of millfeed in tons for week ending Jan. 14, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour extraction.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Jan. 10-14	26,754	705,779	13,778	384,659	11,058	302,622	51,620	1,393,060
Prev. week	24,467		13,683		11,366		49,516	
Two wks. ago	22,183		11,939		10,960		45,081	
1954	33,926	675,319	15,731	407,200	9,940	284,820	60,597	1,367,339
1953	24,483	700,569	17,053	434,332	10,636	290,259	52,171	1,434,160
1952	27,826	698,950	14,410	433,146	9,758	285,000	51,996	1,406,994
1951	28,860	748,004	15,679	519,514	10,232	264,804	54,872	1,532,322

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

Turkey Industry Outlook Brighter, Growers Told at Annual Convention

ATLANTIC CITY, N.J. — The long term outlook for the turkey industry continues good, and it appears that supply and demand will be more nearly in balance this year after the "rough" 1954 situation.

This view of the industry situation was presented by Earl L. Butz, assistant secretary of agriculture, at the recent convention of the National Turkey Federation.

Mr. Butz said that if modern scientific trends and more effective merchandising continue, and if growers avoid price supports, the turkey industry future will be good. Regarding this year's outlook, he noted that the price-cost situation should improve with reduced supports on non-basic feed grains.

Meanwhile, NTF directors voted disapproval of high level price supports in spite of the low prices with the record turkey crop in 1954. The board said federal farm price supports should not "reflect a profit to producers."

Dr. J. Holmes Martin of Purdue University told the growers that they can expect 1955 to be as profitable or slightly more profitable than the year facing other meat producers. He warned that turkey men can expect a profit only if they do not overproduce. He said growers must reduce output voluntarily in line with demand or expect controls which are a part of any support program.

Dr. Martin also advised the turkey men to avoid increasing production of small type birds unless there is a market for them.

He predicted that more turkeys would be financed this year but on fewer farms.

Merchandising of turkeys received a large amount of attention. Although consumption has been stepped up through NTF and other campaigns, further sales efforts are needed, the convention was told.

It was announced that growers had a $150,000 goal for the 1955 Eat More Turkey campaign, and that there was an allied industry pledge of $100,000, of which $31,000 had been raised.

Among those honored for their companies' contributions were Clyde Hendrix, Pillsbury Mills, Inc.; E. D. Griffin, Allied Mills, Inc.; H. G. Bos, Dr. Salsbury's Laboratories; Everett W. Turner, Grange Co.; Jack Hill, Buckeye Incubator Co., and Jay Cupp, Anderson Box Co.

Chester C. Housh, Elkton, Va., was elected president of the NTF, succeeding Perry Browning, Winchester, Ky. Other officers elected included J. A. Adams, Pleasant Grove, Utah, first vice president; Trevor L. Jones, Havana, Ill., second vice president; Joe Fechtel, Dallas, third vice president, and Peter Crafts, Grasmere, N.H., fourth vice president.

Julius Mayer Heads Chicago Board of Trade

CHICAGO — Julius Mayer, executive vice president of Continental Grain Co., has been elected president of the Chicago Board of Trade by a ballot vote of the membership, Robert C. Liebenow, secretary, announces.

Mr. Mayer has been first vice president of the board the past year and prior to that served one year as second vice president. He also has been a member of the exchange executive committee the past two years and a director for three years.

Paul Joslyn, secretary-treasurer of J. J. Badenoch Co., was elected first vice president and John E. Brennan of John E. Brennan Co. was elected second vice president.

Five directors elected for three-year terms were Paul E. Berry, broker; Ford M. Ferguson of Stratton Grain Co.; Edward J. Kazmarek, vice president of Illinois Grain Corporation; William J. Kentnich, Jr., broker, and Clarence Rowland, Jr., of Engel & Co. Vincent M. Fagan, broker, was elected to serve a one-year term as director to fill an unexpired term.

Others elected were Sylvester J. Meyers, retiring president of the board and president of Arcady Farms Milling Co., and William Enke, Jr., vice president, Stratton Grain Co., as members of the exchange nominating committee. Ardin P. Buell of John G. McCarthy Co.; Samuel A. McMurray of Merrill Lynch, Pierce, Fenner & Beane; John M. Rose, Jr., broker; Marshall K. Smith, broker; and Edward F. Thompson of Lamson Bros. & Co. were named as members of the appeals committee.

James S. Templeton, Santa Fe Elevator Corp.; Frederick G. Uhlmann of Uhlmann & Benjamin Co.; Raymond M. Gerstenberg of Gerstenberg & Co.; Robert L. Raclin of Bache & Co.; and John G. McCarthy, Jr. of John G. McCarthy Co. were elected members of the committee of arbitration.

Minneapolis Grain Shippers to Meet Feb. 1

MINNEAPOLIS—The Minneapolis Grain Shippers Assn. will meet the evening of Feb. 1 at the Covered Wagon in Minneapolis, according to Brooks Fields, Pillsbury Mills, Inc., secretary. The meeting was postponed to that date from Jan. 18 so that there would not be a conflict with the Northwest Country Elevator Assn.'s "Market Get-Together."

Speaking at the shippers' meeting will be John Cipperly, Washington correspondent of Feedstuffs and affiliated publications.

The speaker at the February meeting, to be held Feb. 21, will be Marvin McLain of the U.S. Department of Agriculture, Washington.

A. J. WEISENBERGER DIES

MIDWAY, KY.—Augustus J. Weisenberger, 62, operator of a flour mill here for 40 years, died in a Lexington, Ky., hospital on Jan. 15. He was a past president of the Kentucky Millers Assn.

HERE'S WHY YOU'LL SELL MORE

VICTOR

STILBESTROL MIX

It's BRAND NEW. It's a plus-powered mix with stilbestrol blended-in. The rapid growth-factor of stilbestrol demands more from a feed. Even a "pretty good" feed (with stilbestrol added) will not produce desired results. That's why you'll want to sell a BRAND NEW feed—VICTOR stilbestrol mix.

It's CLOSELY AKIN to the feed used in the initial experiments. The success of the Iowa State tests proved one thing—that cattle did well on a certain type stilbestrol mixture. That's why you'll want to sell a reliable mixture—VICTOR stilbestrol mix.

It's COST-RIGHT. The acid test of any feed is the cost per pound of gain. The return to the feeder for each dollar spent—that's what VICTOR had in mind when it formulated this new feed. You'll want to sell a quality feed—VICTOR stilbestrol mix.

Remember the Name:

VICTOR DRYLOT DIETHYLSTILBESTROL MIX

(for fattening cattle)

32% protein level

And here's the backing you get to help you sell it: new ad mats, news releases, radio scripts, wall posters, new folders, PLUS regional radio and farm press ads.

For additional information on stilbestrol and a VICTOR livestock and poultry feed franchise —write to the mill.

VICTOR FEEDS

CRETE MILLS—A Division of Lauhoff Grain Co.—Crete, Nebraska

Over 100 years experience in making better bags for the milling industry 1847

COTTON • BURLAP • MULTIWALL PAPER • FAMILY SIZE FLOUR BAGS

CHASE BAG COMPANY

General Sales Offices: 309 W. Jackson Blvd., Chicago 6, Ill.

30 BRANCHES AND SALES OFFICES STRATEGICALLY LOCATED

MANEY BROS. MILL & ELEV. CO.

Minneapolis, Minnesota

Distributors in the Upper Midwest States for

SMALL'S DEHYDRATED ALFALFA MEAL

...a cut above the rest!

Small's Dehydrated Alfalfa stands "ace high" with experienced feedstuff buyers. They know that it is harvested, processed, stored and shipped with that extra measure of care that assures contract quality and delivery on the date specified.

You, too, will like the winning ways of Small's Dehydrated Alfalfa. You can count on its consistent quality and color to build customer confidence and satisfaction in your feeds.

FOR FEEDS WITH A FUTURE

Small's

DEHYDRATED ALFALFA MEAL

W. J. SMALL COMPANY

DIVISION

ARCHER-DANIELS-MIDLAND COMPANY

1200 Oak Street

Kansas City, Missouri

Dairy Bull Calves on Stilbestrol Gain Less Than Controls in Vermont Study

BURLINGTON, VT.—Scientists at the Vermont Agricultural Experiment Station recently reported the results of an experiment showing that dairy bull calves fed diethylstilbestrol gained less than the control calves.

A three-month feeding trial with the hormone-like substance was conducted with two sets of identical twin dairy bull calves. In one test, where the initial weight of each calf was about 470 lb., the control calf made a 70% greater gain than the treated twin calf. In another test, where the initial weight was about 260 lb., the control calf's gain was 20% greater over the three-month period.

The calves were fed the hormone in a commercial dairy mix, and hay was fed ad libitum.

The amount of grain fed was held constant. In the Iowa State College work in feeding hormones to fattening cattle, the steers were allowed corn according to appetite, it was pointed out.

The research was reported by Dr. W. H. Riddell and Dr. J. A. New lander of the animal and dairy husbandry department at the University of Vermont.

The Vermont report said: "A possible explanation of the results is that the hormone lowered the digestibility of either the hay or grain or both, since lower gains were made on practically the same amount of feed consumed."

(In connection with their findings on increased appetites and gains in feeding stilbestrol to fattening beef cattle, Iowa scientists noted that cattle weighing less than 600 lb. had not been tested. And there was not a recommendation that beef cattle below that weight be fed stilbestrol.

(Although the Vermont report did not so specify, it may be noted that the dairy bull calves probably had not been castrated, with a result that the hormonal balance of the animals was probably upset by the feeding of the hormone.

(At the present time it is not recommended that stilbestrol be fed to any dairy or beef breeding animals.)

The Vermont researchers cited the Iowa State results showing greater gains with the feeding of stilbestrol to fattening cattle at a rate of 11 milligrams daily per steer.

Vermont Study

They went on to explain that they had conducted a three-month trial feeding the hormone to two sets of identical twin dairy bull calves. The calves had been used in an earlier grass silage feeding test. One calf in each set served as the control, and the other received the hormone in peanut oil which was incorporated thoroughly in a 16% commercial dairy mix. Each calf was fed 3 lb. of the mix and this amount provided 10 milligrams daily of the hormone. A good quality hay was fed ad libitum.

The animals were weighed weekly.

Each of the calves in the first pair had an initial weight on April 21 of about 470 lb. The control calf gained 168 lb. in three months, while the hormone-fed calf gained 98 lb.

Each calf in the second pair had an initial weight of about 260 lb. The control calf gained 164 lb. in three months while the hormone-fed calf gained 136 lb.

Hay was fed ad libitum but no record was kept of the amounts eaten until the period beginning June 9. The amounts of hay consumed for the period June 9-July 21 by the first pair were 501 lb. for the control and 544 lb. for the hormone-fed calf. The gains during this period were 90 and 72 lb., respectively. The hay consumed by the second pair was 394 lb. for the control and 392 lb. for the hormone-fed calf. The gains were 74 and 64 lb. respectively.

Thus the hormone-fed calf in the first pair ate more hay than its twin, while the other two consumed about the same. During this period the control calf in the first pair gained 25% more than its twin, and in the second pair the control gained 16% more.

Emerson C. Long

DIVISION MANAGER—H. A. Wendler, general manager of the Highway Equipment Co., Inc., Cedar Rapids, Iowa, has announced the appointment of Emerson C. Long as manager of the firm's bulk feed body division. As manager, Mr. Long will be responsible for all sales of bulk feed bodies. Prior to his new appointment, Mr. Long had six years' experience in the company's sales department.

Indiana Feed Group's Program Plans Complete

INDIANAPOLIS — Program plans are complete for the 53rd annual meeting of the Indiana Grain & Feed Dealers Assn. at the Claypool Hotel here Jan. 23-25.

Dr. W. M. Beeson, animal husbandry department, Purdue University, will moderate a panel discussion on cattle nutrition and feeding Jan. 24. Panel members and their topics will be Dr. Thomas L. Meade, Chas. Pfizer & Co., Terre Haute, "Use of Hormones in the Feeding of Cattle"; Dr. Ray W. Pifer, McMillen Feed Mills, Ft. Wayne, "Building a Balanced Supplement for the Utilization of Roughages," and Dr. Hobard B. Geurin, Ralston Purina Co., St. Louis, "Supplementing Corn for Fattening Cattle."

Features of the Jan. 25 program will be discussions of feed grinding costs and rodent control. The annual banquet is scheduled for 6:45 p.m. Jan. 24.

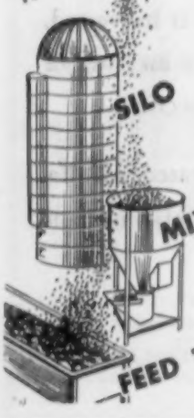
GUARANTEED FREE-FLOWING

HI • MO • LASS

TRADE MARK

... New Cane Blackstrap Molasses and Corn Oil Meal Feed Supplement that is Sweeter Tasting because of 42% OR MORE SUGAR CONTENT

ALWAYS FLOWS FREE TO



SILO

MIXER

FEED TROUGH

ADVERTISED IN:
Arkansas Farmer
Kansas Farmer
Minnesota Farmer
Missouri Ruralist
Nebraska Farmer
Oklahoma Farmer-Stockman
Prairie Farmer
Texas Farmer-Stockman
Wallace's Farmer
Wisconsin Agriculturalist
(Other state and regional publications will be added to this list as territories are opened.)

Help your customers to better stock and poultry profits with HI-MO-LASS, the easy-mixing feed supplement that is guaranteed not to cake, melt or lump no matter what the weather! Economical HI-MO-LASS also offers the advantages of an extra high sugar content that aids digestion, increases water intake and makes even the unpalatable fiber feeds taste good . . . and a high natural mineral content that increases absorption of all beneficial food elements. Send for a free sample today!

(SOME GOOD FRANCHISES AVAILABLE)

Ask for Free Sample . . . test HI-MO-LASS yourself and you'll quickly see why you can recommend it to all your customers!

DFP DOANE FEED PRODUCTS CO.

Send inquiries to:
SALES OFFICE
Dept. D, Board of Trade Bldg.
Kansas City, Missouri

Executive Offices and Plant, Joplin, Mo.

Thanks for the opportunity to serve you on your millfeed needs— and other feed ingredients.

— Jerry Parks

602 Board of Trade Building Kansas City, Missouri

Samuel Mairs, ADM Board Chairman, Dies

MINNEAPOLIS — Samuel Mairs, 75, chairman of the board of Archer-Daniels-Midland Co., Minneapolis, died Jan. 17 in Jamaica, where he was vacationing. He joined ADM in 1903, shortly after the firm's founding.

Mr. Mairs and his wife had arrived Jan. 16 at the West Indies island from their home in St. Paul. Death was attributed to coronary thrombosis.

Mr. Mairs was born at Hastings, Minn., where his grandfather had opened the state's first roller flour

Samuel Mairs

mill in 1854. He was educated at the University of Minnesota and after working briefly for a St. Paul bank, became bookkeeper for the new firm of ADM on June 1, 1903, and began his lifetime work of helping build it into the multi-million-dollar concern which it is today. In 1908 Mr. Mairs, then 28 years old, was made secretary and director of the Archer-Daniels Linseed Co. He served as treasurer from 1909 until 1911.

In 1923, when Archer-Daniels-Midland Co. was incorporated, he was elected a director and secretary, and in 1924 Mr. Mairs was elected a vice president of the company. He was elected executive vice president in 1933, and held this position until 1947 when he succeeded the late Shreve Archer as chairman of the board of directors. He was also a member of the company's executive committee.

Mr. Mairs held the distinction of having been employed with Archer-Daniels-Midland or one of its predecessors longer than any other person.

Mr. Mairs also was a director of the First National Bank of St. Paul, of the First Bank Stock Corp., Minneapolis, and of Strutwear, Inc., Minneapolis. His club memberships included Minnesota Club, Somerset Club, and St. Paul Curling Club. In addition to curling, Mr. Mairs enjoyed hunting and golf.

Survivors include his widow, the former Gertrude Schurmier of St. Paul; a daughter, Mrs. Stephen Ober, St. Paul; three sons, George G., Dellwood, Minn., Robert W., South Pasadena, Cal., and Thomas G., St. Paul; two sisters, Miss Clara G. Mairs, St. Paul, and Mrs. Albert B. Dean, Minneapolis; and six grandchildren.

No Commitment Made To FDA on Sanitation, USDA Officials Say

WASHINGTON—Top U.S. Department of Agriculture officials this week categorically denied that the big farm agency has made any commitment to the Food and Drug Administration concerning shipments of Commodity Credit Corp. wheat stocks.

It has been reported that FDA had received a letter from USDA assuring that CCC wheat shipment would be made to conform to the FDA wheat sanitation standards for interstate shipment of wheat for food purposes. Agriculture officials this week said no such assurance had been given USDA.

At the same time, the USDA spokesman said that before CCC shipped any wheat this year after the loan default take-over, USDA would make public its position regarding the FDA sanitation campaign and its standards.

Louisville Exchange Elects H. K. Blandford

LOUISVILLE — H. K. Blandford, president of Oscar Farmer & Sons, feed and grain firm, has been elected president of the Louisville Board of Trade.

John W. Middlekamp was elected vice president, and Wilbur Gordon treasurer. C. W. Winslow was re-elected secretary.

Directors elected are Addison H. Douglass, Thomas S. Owen, Murry Cohen, Henry Freuchtenicht and Mr. Middlekamp.

GMI Central Division Offices Move in K. C.

KANSAS CITY — A move of the central division offices of General Mills, Inc., Kansas City, has created address and telephone changes, effective Jan. 21. Offices of the company are being moved this week-end to the new Postal Life & Casualty Insurance Building on the Country Club Plaza here.

The new address of the headquarters, which includes the Larro Feed Division and the purchasing department, is 612 West 47th St. The telephone number is Plaza 2111.

The grain department will remain at 962 Board of Trade Building, and the telephone number there is Baltimore 8904. Remaining in the Board of Trade offices are Roy E. Swenson, central division vice president and local senior officer; R. E. Larson, grain buyer, and D. T. Hammond.

Karr Quotes

Dehydrated, Specially Processed Corn Cobs

We are processors of corn cobs for industrial and agricultural use, and have limited quantities for sale.

Price: GIVE BID FOR 2 CARS FEBRUARY

KARR-MAIZ COB SCREENINGS

have the hard, tough and rough woody part of cob removed, and just offer that part of cob which can easily absorb molasses and other products.

Karr & Co.

983 East Broad St. Columbus 5, Ohio

Phone: Fairwood 7407

NORTH, SOUTH, EAST, WEST — PROMPT, SURE MOLASSES SHIPMENTS

Since 1918, we have built our reputation on top quality blackstrap feeding molasses and service-*plus*. Today, more than ever before . . . with strategically-located distributing terminals from the Gulf to Canada, from coast to coast . . . we can offer the utmost in prompt delivery and shipping economy. Phone, wire or write us for delivered prices in tank trucks or tank cars.

NATIONAL MOLASSES COMPANY

Executive Offices: ORELAND, PA., Phone: Livingston 8-5900 (PHILA.)

Fruen's

Minneapolis, Minn.

FRUEN'S ACE BRAND ROLLED OATS

(Steam Rolled)

is the finest rolled oat product at anywhere near the price!

Send for samples and prices today.

Millers TO THE FEED TRADE

MIXED CARS SHIPPED AT STRAIGHT CAR PRICES

FRUEN MILLING COMPANY

MINNEAPOLIS 5, MINNESOTA

Chick Output Shows Another Drop; Poult Production Gains

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — After reviewing the newly issued report on December hatchery operations, Commodity Stabilization Service officials are sleeping more restfully these nights, sensing that at least the poultry and broiler industry will not be the grotesque object of nightmares of price support problems.

First, on the poultry industry side of the hatchery report, another reduction was shown in chick output in December, as compared with the same month of 1953, reflecting the determination of the broiler industry to take its medicine quickly even if rigorously.

The December decline in chick production is backed up by an indicated reduction in January as compared with a year ago, for the number of eggs in incubators on Jan. 1 was 25% below a year earlier.

During December, USDA noted, hatcheries continued to reduce settings of eggs because of low broiler and egg prices.

Recently, as shown in later reports on chick placements in broiler areas, there has been a pick-up in broiler chick placements as compared with immediately preceding weeks. This reflects the marked broiler price gains brought on by the reduced production of market birds. However, placements have still been well below a year earlier. For example, in the week ended Jan. 8, placements in 12 areas totaled 11,785,000, compared with 14,445,000 a year earlier.

The turkey page in the ledger is not as optimistic as the chicken and broiler page, but is not yet one of alarm, CSS officials indicated on the basis of the hatchery report and other considerations. The December hatch of heavy breed poults was again showing an advance over a year earlier, and the light breed production was again on the climb. It appears that even the tight cost-price situation this past year failed to subdue the turkey enthusiasm very much.

(Also see story on turkey growers' intentions on page 1.)

CSS officials are watching the turkey situation, but they are not yet alarmed, since the recent months of the new crop year are not significant in the over-all picture. However, maintained trends of increased production, particularly in heavy weight varieties, would stir up the goblins within CSS circles and probably in the industry advisory committee.

There may be some basis for the possible turkey production situation. Producers possibly sense the CSS policy of establishing and maintaining improved feeding relationships between animal units and feed costs. All signs point that way with supports reduced on the small feed grains, and with heavy supplies of oilseed meals indicated.

It is difficult to see how the turkey industry can be persuaded to stop its present habits, no matter how potentially harmful, unless CSS calls a halt.

Chicks Hatched by Commercial Hatcheries

(000's omitted)

State and division	During Dec. 1953	During Dec. 1954	Jan. thru Dec. 1953	Jan. thru Dec. 1954
Maine	2,293	2,359	25,726	20,157
N. H.	2,251	1,692	25,293	27,755
Vermont	68	34	1,123	976
Mass.	3,405	1,611	28,156	27,864
R. I.	136	116	1,272	1,754
Conn.	4,405	2,270	52,256	50,282
N. E.	11,748	9,081	140,851	128,818
N. Y.	2,026	1,300	21,243	28,928
N. J.	3,300	1,900	43,800	45,489
Pa.	4,710	3,229	81,320	76,694
M. A.	9,036	6,429	156,363	150,111
Ohio	3,448	1,400	64,407	61,515
Ind.	3,540	2,765	106,675	108,763
Ill.	2,232	800	74,409	73,032
Mich.	1,060	700	28,215	28,008
Wis.	951	780	28,032	27,324
E. N. C.	13,171	7,415	298,738	297,642
Minn.	200	140	53,740	55,440
Iowa	650	250	76,060	74,995
Mo.	7,400	2,675	115,900	104,490
N. D.	59	40	4,954	5,358
S. D.	...	...	15,200	14,100
Neb.	261	130	36,128	37,145
Kansas	785	270	27,060	29,481
W. N. C.	9,355	3,605	319,042	313,039
Del.	4,809	3,296	56,730	51,104
Md.	6,241	4,357	70,564	67,065
Va.	6,156	4,043	74,729	68,758
W. Va.	766	514	11,057	11,136
N. C.	5,460	4,622	67,936	78,329
S. C.	1,080	721	12,010	13,940
Georgia	11,394	13,431	132,940	163,970
Florida	2,658	1,760	25,788	30,810
S. A.	38,594	31,764	460,754	485,142
Ky.	1,200	700	15,500	14,336
Tenn.	1,376	1,223	21,587	21,842
Ala.	2,696	2,605	29,795	30,304
Miss.	3,690	2,720	42,894	45,890
E. S. C.	8,965	7,248	109,876	135,372
Ark.	6,961	5,159	69,517	72,012
La.	743	632	8,200	9,798
Okla.	770	550	16,000	17,470
Texas	7,377	5,050	94,686	98,966
W. S. C.	14,850	11,391	178,403	198,245
Mont.	45	35	2,704	2,499
Idaho	159	143	4,433	4,537
Wyo.	...	...	364	303
Colo.	336	300	7,448	7,158
N. Mex.	...	...	643	634
Ariz.	56	67	1,282	1,256
Utah	81	90	2,953	3,263
Mount.	678	634	19,805	19,650
Wash.	1,440	1,315	22,200	23,462
Ore.	789	795	16,107	15,371
Cal.	5,372	6,617	101,478	106,511
Pacific	10,801	8,730	138,785	145,344
U. S.	116,198	86,297	1,822,617	1,873,364

Poults Hatched by Commercial Hatcheries

(In thousands)

Selected states—	During December: Heavy breeds 1953	Heavy breeds 1954	Light breeds 1953	Light breeds 1954	January through December: Heavy breeds 1953	Heavy breeds 1954	Light breeds 1953	Light breeds 1954
Pennsylvania	...	6	92	78	1,490	1,251	920	1,169
Minnesota	20	44	216	203	4,480	4,976	3,050	4,759
Virginia	37	62	333	478	1,889	2,499	5,336	6,207
South Carolina	97	73	46	79	1,285	1,394	475	542
California	113	208	53	*	10,095	10,287	*	*
Other states*	78	132	466	655	26,685	29,258	7,672	8,641
United States	345	545	1,306	1,593	45,924	49,765	17,453	21,318

*Combined to avoid disclosing individual operations.

RESEARCH GRANT—The Northwest Feed Manufacturers Assn. presented its annual $2,000 nutrition research grant to the University of Minnesota at a recent meeting of the association in Minneapolis. Shown here accepting the check for the university are Dr. H. J. Sloan (left), director of the Minnesota Experiment Station, and Dr. L. E. Hanson (center), professor of animal husbandry. Making the presentation is Don Swanson (right), Blomfield-Swanson Nutrients, chairman of the association's university fellowship committee. Dr. Hanson outlined baby pig nutrition research which has been carried on in the past with the help of the grant, and he told of questions still to be answered. The speaker at the meeting was Dr. E. C. Stakman, formerly head of plant pathology and botany at Minnesota and now a consultant to the Rockefeller Foundation. He told of "The World's Fight Against Hunger."

Production Figures

The number of chicks hatched in December was 86,297,000, 26% less than in December a year earlier. The December hatch was below a year earlier in all sections of the country, with the percentage drops particularly large in the north central states.

All sections also show declines in the numbers of eggs in incubators on Jan. 1 as compared with a year earlier. The largest percentage decreases are in the north central states.

For all of 1954, the number of chicks hatched by commercial hatcheries was the largest of record, 3% above 1953. This was brought about by increased broiler production during most of the year and by the raising of more chicks for flock replacement the first part of the year. The output of chicks during the year totaled 1,873,364,000, compared with 1,822,617,000 in 1953.

The number of heavy breed poults hatched during December was 545,000, compared with 345,000 in December, 1953. Light breed turkeys hatched during the month totaled 1,593,000, compared with 1,306,000 a year earlier. The number of heavy breed eggs in incubators on Jan. 1 totaled 1,460,000. The number of light breed eggs totaled 2,018,000. No comparisons with a year ago are available.

ENTOLETER CONFERENCE — A technical clinic and engineering-sales conference were held for Entoleter Division sales representatives, special agents and home office personnel in the New Haven, Conn., plant of The Safety Car Heating & Lighting Co. recently. During the three-day meeting a series of panel discussions was conducted to acquaint company personnel with the latest Entoleter equipment developments and to exchange information on the most noteworthy applications of the year. Plant tours were arranged to familiarize representatives with recent improved manufacturing methods and laboratory facilities. Among those present for the discussion were H. F. Kneen, president of the Safety company; Robert B. Dodds, vice president of the Entoleter Division, and Robert J. Hoskins, R. J. Fitzgerald and A. T. Drake of the New Haven office. Shown above in attendance at the meeting are, left to right, L. L. Purdy, Mr. Drake, P. Whetstone, D. A. McCarthy, G. L. Smutny, J. D. Napier, Mr. Fitzgerald, Mr. Dodds, G. B. Stearns, J. N. Mees, Mr. Hoskins, F. Shidler, K. E. Bratney and J. H. Dean.

USDA Sells Whey for Export at 2½c lb.

WASHINGTON—The U.S. Department of Agriculture has announced the sale of dry whey at 2½¢ lb. for export.

The Interoceanic Commodities Corp., New York, purchased 1,100,000 lb. of dry whey at 2½¢ lb., f.a.s. port of New York, for export. USDA said this leaves 13.9 million pounds of the 15 million pounds of dry whey offered for export on bid basis in December still available for export sale.

Dry whey is also offered for domestic sale at 6.75¢ lb. in store. USDA has taken over some 46.8 million pounds of dry whey and dry whey products placed under loan. Of this quantity, 14.9 million pounds have been sold, all for export. CCC inventory now totals 31.7 million pounds.

BUYS ELEVATOR SHARE

KEWANNA, IND.—William Harp, Oden, Ind., has bought the elevator share in the Kewanna Grain Co. formerly owned by Charles Elmore, former manager, and has become manager.

ANTIBIOTICS WILL NOT CURE CRD!

ANTIBIOTICS WILL FIGHT SECONDARY INVADERS

STIMULATE APPETITE

new

CSC PENLINE-200

(PROCAINE PENICILLIN)

gives you

HIGH-LEVEL FEEDING

AT LOW-LEVEL COST

saves you $5 to $12 per ton of high-level feed

Fight Bacterial Invaders—Stimulate Poultry Appetite

Poultry pathologists have told us for some time that antibiotics fed to poultry do not destroy the organism causing chronic respiratory disease. The secondary bacterial invaders that follow diseases of the respiratory tract are the real culprits in the broiler pen or laying house. Here is where antibiotics can do a real good job.

One of the earliest indications of the onset of disease is reduced feed intake. CSC PENLINE-200, procaine penicillin, helps fight secondary invaders – helps stimulate appetite, returning birds to full feed intake, and hastening recovery.

High-Level Feeding At Low-Level Cost

Penicillin, bacitracin and the tetracycline antibiotics at high-levels show comparable results on a gram for gram basis. In test after test on the farm totalling hundreds of thousands of birds, CSC PENLINE-200 did an unsurpassed job – at lowest cost. Compared to other antibiotics, PENLINE-200 procaine penicillin saves $5 to $12 per ton of high-level feed.

PENLINE-200—Designed for High-Level Feeding

Calculations are made easy. Each pound of PENLINE-200 contains 200-grams of CSC procaine penicillin. PENLINE-200 is the first penicillin supplement designed expressly for high-level use. You can order PENLINE-200 in 5 to 100-pound vinyl lined fibre drums.

Selective Activity — The Key to Antibiotic Effectiveness

The most important criterion for the effectiveness of any antibiotic is its *selective activity* – the activity it exhibits in controlling the "harmful" organisms while at the same time not injuring or retarding the animal tissue itself or the many "beneficial" organisms.

If we did not require selectivity, we could use the antiseptics and disinfectants for disease, since such products, after all, have the widest killing range. The caution and consideration which goes into the proper selection of these agents must also be applied to the choice of antibiotics. An antibiotic should be chosen on the basis of the job to be done and the cost involved.

Penicillin is selectively active against secondary bacterial invaders, it stimulates appetites, and at the same time will promote the growth of intestinal organisms of benefit to the birds.

Broad spectrum? Narrow spectrum? In the down-to-earth business of marketing eggs and birds let's stop chasing rainbows. Choose your high-level antibiotic on the basis of selective activity, economy, and proven effectiveness.

CSC PENLINE-200 has proven itself. The right selective activity. The right price that saves you $5 to $12 per ton of feed, the right results in fighting secondary invaders and stimulating appetite. Write for all the facts and proof of performance, and proof it's the most economical buy you can make.

ANIMAL NUTRITION SALES DEPARTMENT

CSC COMMERCIAL SOLVENTS CORPORATION

260 MADISON AVENUE, NEW YORK, N. Y.

CALCIUM PRODUCTS CO.

Laboratory CPC *Controlled*

Calcium Carbonate; Iodized—Manganesed; Trace Minerals; Poultry, Ruminants, Swine

Plants: Carthage, Mo.; Hannibal, Mo.; Webb City, Mo.; Sulphur Springs, Ark.

Spiva Bldg. **Joplin, Missouri**

Genuine Cane **BLACKSTRAP MOLASSES**

NORTH AMERICAN TRADING & IMPORT CO., INC.

LARGEST IMPORTERS OF BLACKSTRAP MOLASSES IN THE UNITED STATES

1429 WALNUT STREET • PHILADELPHIA 2, PA.

Mississippi Seedmen's Group Holds Meeting

BILOXI, MISS.—The fourth annual convention of the Mississippi Seedman's Assn. was held Jan. 9-11 at the Buena Vista Hotel, with John C. Wax of Amory, president, presiding over the business sessions.

Meetings of the executive committee and convention committees were held on the afternoon of Jan. 9. The president's reception was that night.

Among the speakers at the three-day meeting were Dr. Ben Hilbun, president of Mississippi State College; Charles McNeil of Jackson; Dr. Louis N. Wise of Mississippi State College; L. C. Murphree of Clarksdale; Ben Sams of Crystal Springs, Miss.; Ken Skarein of San Antonio, Texas; C. H. Talley of Greenwood, Miss.; G. C. Vaughn, chief inspector, Mississippi Department of Agriculture and Commerce; T. M. Patterson, B. I. Minyard and C. W. Sullivan, all of Jackson; and Miss Etta Pace, Cleveland, Miss.

CCC Control of Large Amount Of Corn Shown

WASHINGTON — The Commodity Credit Corp. controlled more than 1.1 billion bushels of wheat and 736 million bushels of corn as of Nov. 30. This is shown in the latest U.S. Department of Agriculture report on the status of the Commodity Credit Corp. price support program.

A total of 346,145,084 bu. wheat was under loan as of Nov. 30, and the amount of wheat in the CCC inventory on that date was 761,804,083 bu.

The CCC investment in price support commodities as of Nov. 30 was $6,890,017,000, including loans outstanding of $2,675,170,000 and the cost of inventories, $4,214,847,000. The net realized loss on price support operations for the first five months of the fiscal year 1955 totaled $257,101,234.

Kansas City Exchange Presidents Honored

KANSAS CITY—Erwin R. Jessen, vice president, Uhlmann Grain Co., Kansas City, was host to past presidents of the Kansas City Board of Trade last week at a dinner party at Mission Hills Country Club in Kansas City. The event honored George Kublin, vice president, Continental Grain Co., new president of the board. Mr. Jessen was president of the group in 1945.

Other past presidents who attended the dinner included F. A. Theis, Simonds-Shields-Theis Grain Co., 1931; W. B. Lincoln, Wolcott & Lincoln, Inc., 1932; H. A. Merrill, 1935; E. C. Meservey, Jr., Meservey-O'Sullivan Grain Co., 1939; J. F. Leahy, 1940; R. E. Swenson, General Mills, Inc., 1941; G. A. Johnson, Wolcott & Lincoln, 1942; John Stark, Mid-Continent Grain Co., 1943; E. E. Klecan, Klecan Grain Co., 1944; T. A. O'Sullivan, Flour Mills of America, Inc., 1946; E. F. Merrill, Moore-Lowry Flour Mills Co., 1948; E. M. Marshall, Shannon Grain Co., 1949; G. F. Hilts, 1950; Francis J. FitzPatrick, Simonds-Shields-Theis Grain Co., 1951; Warren E. Root, Root Grain Co., 1952; J. J. Wolcott, Wolcott & Lincoln, Inc., 1953, and R. E. Larson, General Mills, Inc., 1954.

Elevator Dedication In Iowa Set for Jan. 24

DES MOINES, IOWA—The new $3,500,000 elevator of the Farmers Grain Dealers Association of Iowa southeast of here will be dedicated during the association's annual convention here Jan. 24-26. The ceremoney will be the afternoon of Jan. 24.

The elevator has 277 bins, with a capacity of five million bushels of grain.

Champion's Boon to Busy Farmers—

A COMPLETE "ON THE FARM" feed manufacturing service

Drive a CHAMPION to reach more customers and sell more tonnage of formula feeds. These rugged yet light weight mobile units can quickly extend your business and build up a profitable volume of tonnage. Backed by years of experience, new and modern methods plus effective design have produced this HORIZONTAL Molasses mixing unit, for fast, efficient, trouble-free service.

CHAMPION

MILL AND MIXER UNITS

POWERFUL

CONVENIENT

DEPENDABLE

- Two-ton Horizontal Mixer.
- Hammermill directly connected to 170 H.P. engine.
- Power costs with LP gas comparable to diesel or electric power costs.
- Molasses tank with 3,000 pounds capacity.
- Tilting-swinging variable speed drag feeder with hydraulic lift.
- Powerful permanent magnet protects feed and mill against tramp iron.
- Grinds three bales of hay per minute.
- Grinds a ton of ear corn in five minutes.
- Detachable feed table for hay and roughage.

CHAMPION Vertical Mixer

Another money-making unit, CHAMPION'S Two-Ton Vertical Mixer is equipped with either a 130 or 170 H.P. mill, and ground level feeder. Designed for profitable "ON THE FARM" feed manufacturing service, this heavy duty but light weight unit will increase tonnage for the dealer and save money for the feeder.

Drive a Champion for More feed manufacturing business

Manufactured by

CHAMPION PORTABLE MILL CO.

2109 COMO AVENUE S. E., MINNEAPOLIS 14, MINNESOTA

Swift's FEEDS

Contain CALOGEN,

Swift's new energy ingredient

LONFOSCO Soft Phosphate with Colloidal Clay

Prepared by: Loncala Phosphate Co. High Springs, Fla.

Distributed by: Warren-Douglas Chemical Co.

1513-15-17 Burt St., Omaha, Neb.

Read this, Mr. Feed Man, AND YOU'LL NEVER BUY ORDINARY CONDENSED FISH SOLUBLES AGAIN . . .

HERE IS ITEMIZED PROOF OF THE SUPERIOR QUALITY OF LASSEN PROCESS* CONDENSED FISH SOLUBLES

✔ HIGHER VITAMIN CONTENT

Condensed fish solubles are the most potent natural source of the unidentified growth factors, as well as Vitamin B_{12}, that make for bigger chickens and bigger profits. Lassen Process solubles, produced by a patented low-temperature method, lose none of the important nutrients lost in direct-heat methods of production.

✔ NO SPOILAGE

The Lassen Process includes a special stabilizing treatment that insures against spoilage. This means that feed manufacturers who buy Lassen Process solubles are able to use *all* and not just a part of the fish solubles they buy.

✔ EASIER HANDLING AND MIXING

Condensed fish solubles made by the Lassen Process contain practically none of the insoluble materials which leave that wasteful sludge at the bottom of tank cars and which make unloading so difficult. Fewer insoluble materials also mean less clogging of screens during mixing.

✔ GREATER PALATABILITY

Lassen Process solubles, being superior in quality, add greater palatability to feed because they taste better, smell better and look better. *They also eliminate dust.*

LASSEN PROCESS CONDENSED FISH SOLUBLES INCREASED PROFITS 19.2%

At the Experimental Poultry Testing Laboratory of the world's largest fish cannery, newly hatched New Hampshire chicks were separated into two groups. Group I received a normal broiler-fryer ration. Group II received the same ration with Lassen Process Condensed Fish Solubles added at a level of 3%. Soybean meal and corn levels in the Group II ration were reduced to equalize protein content (21%) in both rations.

After 10 weeks the average **Group I** bird weighed **3.19 pounds**
After 10 weeks the average **Group II** bird weighed **3.56 pounds**

Addition of Lassen Process Condensed Fish Solubles to the ration, in terms of current poultry prices, represented a profit increase of 19.2% —$90.42 per thousand birds.

* *The Lassen Process is a patented process—U.S. Patents Nos. 2188008 and 2372677—for producing condensed fish solubles. Fish by-products producers who use this process are licensed and must conform to the manufacturing methods specified by the process.*

We invite your inquiry for further details

THE LASSEN PROCESS
For Manufacturing Condensed Fish Solubles

772 TUNA STREET • TERMINAL ISLAND • CALIFORNIA

Ask for it by name

★ More protein
★ More Vitamin-B¹
★ Solvent Extracted Meal or Pellets

Minnesota 36% PROTEIN LINSEED MEAL

Minnesota Linseed Oil Company
Minneapolis 21, Minnesota

We have . . . Ray Ewing PERFORMANCE PRE-MIXES

Distributed in Iowa by
V. A. MAGNUSON SALES COMPANY
804 10th Street West Des Moines, Iowa
Des Moines 9-7097

Number of Sheep and Lambs on Feed Down 4% From Year Ago

WASHINGTON — The number of sheep and lambs on feed for market in the U.S. on Jan. 1 was 4% smaller than last year, according to the U.S. Department of Agriculture. The number is estimated at 3,952,000 head, 165,000 head less than last year.

Most of the decrease was in the number of lambs on feed in the Corn Belt states and on wheat pastures in the southwestern plain states.

In the 11 Corn Belt states, the number of sheep and lambs on feed is estimated at 2,180,000 head, 10% below a year ago. Lamb feeding was less than a year ago in all of the corn belt states except Michigan, which reports the same number on feed as a year ago.

Feeding in each of the states of Illinois, Missouri and Kansas was 15% below a year earlier, while the number on feed was down 10% in Indiana, Wisconsin, Minnesota, Iowa and Nebraska. In South Dakota the number on feed was down 4% and in Ohio, down 2%.

Shipments Down

Shipments of sheep and lambs into the nine Corn Belt states for which state inspection data are available for July through December, 1954, were 7% below the same months for 1953. All states except Indiana and Michigan received fewer sheep during this six-month period than a year earlier.

The number of lambs on feed in the wheat pasture areas of the Great Plains was down from last year. In Kansas the number of sheep and lambs on wheat pastures on Jan. 1 is estimated at about 134,000 head, compared with 196,000 head last year. The drouth in the central and southern plains states restricted early development of wheat pastures. However, rains in October improved wheat pastures and a limited acreage was available for pasture. Total lambs on feed in Kansas were down 15%; in Oklahoma, 33%. In Texas the total number on feed is estimated to be the same as a year ago.

The number of lambs on feed in Colorado, the leading western feeding state, was up 7% from Jan. 1 last year. Nearly all of the increase in Colorado occurred in the irrigated areas of northern Colorado, where 397,000 head were on feed this year, compared with 320,000 head last year. The Arkansas Valley showed a decrease of 21%. In California, the second largest feeding state in the West, sheep and lambs on feed are estimated at 312,000 head—18% larger than on Jan. 1, 1954.

Lamb feeding in the north Platte Valley of Nebraska and Wyoming was below a year ago.

Elsewhere in the West, numbers on feed this year were higher than a year ago in most states. Arizona is estimated to have 38% more sheep and lambs on feed; New Mexico, up 21%; Wyoming, up 9%; and Idaho, up 6%. Oregon had the same number on feed as a year ago, while Montana was down 6%.

Weather conditions to Jan. 1 were generally favorable for lamb feeding, except in the Great Plains states where lack of rainfall restricted development of wheat pastures.

Feed supplies are ample, except in drouth areas.

ILLINOIS FEED MAN DIES

JOHNSON CITY, ILL.—Tom Colombo, 73, owner and operator of the Colombo Feed Store in Johnson City, Ill., for the past 30 years, died Jan. 5.

10 reasons why!

3 NFZ gives you superior coccidiosis control. Lower mortality, fewer runts and culls.

4 Better growth and feed efficiency.

5 No interference with development of immunity . . . even at treatment level.

6 Does not build up in tissue . . . not a stress factor. Contains no sulfa drugs.

7 Effective against a wide range of bacteria including pullorum.

8 Stable when stored or mixed in feeds.

9 Compatible with other drugs commonly used in feeds or water.

10 Effective at a lower level than any other coccidiostat.

nfz NITROFURAZONE ®

For coccidiosis

1 Consistently effective at one low-level in broiler or starter-grower rations.

2 It's safe . . . non-toxic to all poultry, livestock and pets.

Only NFZ offers you all ten advantages. NFZ is America's fastest-growing coccidiostat—fed to over 30,000,000 birds each month. And—the cost is less than 1c per bird for continuous protection during the danger period. Write, wire, or phone for all the facts on nitrofurazone (NFZ). Feed Products Division, Dr. Hess & Clark, Inc., Ashland, Ohio.

THE HEN'S CHOICE EGGSHELL BRAND

"Lotta Bucks"

EGGSHELL BRAND

Good poultrymen know it pays to give hens what they like — and for calcium, it's Eggshell Brand. This oyster shell is made soft and digestible by aging in the waters of Mobile Bay. Economical, too, because all dust is removed before bagging, so you get only edible shell.

PURE REEF OYSTER SHELL

OVER 26 YEARS OF SERVICE

SOUTHERN OYSTER SHELL MILLING CORP.
MOBILE, ALABAMA

LIMESTONE • BENTONITE

Calcium Carbonate for Feed Mixing

U.M.C. CALCIUM CARBONATE comes from our Weeping Water, Nebraska, deposit. Pure white—Not off color—Over 96% Calcium Carbonate—Ground to your specifications. Submit your samples for prices.

UNITED MINERAL PRODUCTS CO.
1117 WOW Bldg. • Omaha, Nebraska

In just 2 words we can tell you what you want to know about NOPCO Custom Mixes

1 Compatibility
2 Stability

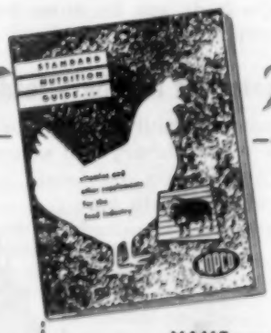
Compatibility

Anyone can mix a supplement according to your specifications. But when you get a Nopco Mix, you can be confident that it is correctly produced and entirely compatible. Your order is checked against the extensive compatibility studies which have been stock-piled by Nopco's technical staff, and its production is carefully supervised. In those cases where there is insufficient evidence of compatibility, we tell you frankly and suggest alternative formulations.

Stability

Nopco's *Micratized*® Vitamins A & D have proved their stability in test after test. There is nothing else on the market that withstands so many "difficult" mixes and unfavorable conditions so effectively. With *Micratized* Vitamins A & D, your customers get the potency they pay for and the production they need to make top profits.

If you would like to know how much difference know-how makes in formulating effective supplements to your specifications, write for complete information.



NOPCO
CHEMICAL COMPANY
Harrison, N.J. • Richmond, Calif.
Pioneer Producers of Quality Supplements for the Feed Industry

Nopco Chemical Company
100 Front St., Harrison, N.J.
Please send me the Nopco Nutrition Guide.

NAME _____
FIRM NAME _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

Wholesale Feedstuffs Price Index

INDEX NUMBERS OF WHOLESALE FEEDSTUFFS PRICES
BASE PERIOD 1935-39=100

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Aver.
1954-55	216.9	221.6	222.2	...	...	...	...	...	...	...	...	...	...
1953-54	201.2	203.4	235.2	234.8	239.0	242.1	266.4	252.8	239.5	242.0	237.2	219.2	234.1
1952-53	253.4	257.2	257.2	251.7	242.0	236.2	227.8	229.2	216.7	215.4	211.2	206.6	234.4
1951-52	258.9	269.0	274.6	277.1	274.0	273.0	279.4	277.4	275.6	270.9	262.6	253.4	251.8
1950-51	267.8	281.1	289.0	283.6	261.3	249.2	243.9	240.7	237.4	240.4	236.6	246.6	256.8
1949-50	212.5	209.7	214.2	206.7	202.9	212.4	221.8	237.3	227.8	251.2	227.5	213.6	219.8
1948-49	208.8	230.4	230.0	226.5	210.8	214.2	226.4	221.4	215.5	229.3	239.2	219.4	222.6
1947-48	253.6	263.1	261.9	313.7	261.6	272.6	276.3	271.6	277.1	259.4	220.1	221.7	271.8
1946-47	239.7	264.0	231.6	206.6	197.4	236.7	224.5	223.0	238.8	257.1	263.9	288.1	237.0
1945-46	166.0	166.1	166.1	166.2	166.2	166.3	166.3	192.3	202.3	278.0	255.2	204.4	190.7
1944-45	164.8	164.6	164.4	164.5	164.8	164.7	164.3	164.2	164.6	164.8	164.9	164.9	164.6

Compiled by Market News Branch, Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture.

INDEX NUMBERS OF FEED GRAIN PRICES (CORN, OATS, BARLEY AND GRAIN SORGHUMS), OCTOBER, 1935, TO SEPTEMBER, 1940=100

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Aver.
1954-55	221.4	216.2	216.6	...	...	...	...	...	...	...	...	...	...
1953-54	208.4	208.1	219.0	218.2	215.9	218.6	220.6	223.8	225.5	223.1	225.4	224.9	219.1
1952-53	228.3	233.0	233.0	237.4	218.9	231.5	231.4	226.3	218.7	221.0	224.4	223.9	224.7
1950-51	207.5	219.9	233.0	240.3	250.2	246.8	247.4	246.6	236.6	240.6	241.8	243.1	237.6
1951-52	247.6	261.4	272.7	269.1	254.5	258.5	254.7	250.2	254.6	253.1	253.4	249.4	256.8
1949-50	173.8	173.5	184.0	184.5	185.2	190.6	201.5	211.3	211.3	218.6	211.6	210.9	196.4
1948-49	207.8	201.3	205.6	203.1	183.3	193.3	197.3	187.5	189.3	192.7	181.3	181.6	193.7
1947-48	334.1	344.6	367.0	378.2	319.1	326.8	325.4	322.3	320.7	286.6	262.2	263.1	319.0
1946-47	254.8	310.4	194.8	192.0	200.4	244.0	248.3	251.1	265.4	294.4	322.3	343.0	253.5
1945-46	170.3	172.7	173.6	173.9	174.1	179.0	178.7	202.1	209.9	293.3	262.8	257.2	204.0
1944-45	164.9	167.1	164.6	168.3	169.0	170.0	166.6	166.2	169.4	170.2	167.5	168.3	166.3

Compiled by Market News Branch, Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture.

G. Cullen Thomas Heads Pure Food and Drug Advisory Committee

WASHINGTON — G. Cullen Thomas, vice president of General Mills, Inc., Minneapolis, is chairman of a new advisory committee to the Department of Health, Education and Welfare.

Mrs. Oveta Culp Hobby, secretary of the department, said the committee of 14 would evaluate the adequacy of enforcement of the federal pure food and drug laws.

The purpose of this committee, Mrs. Hobby said, is to "make recommendations as to the amount and kind of enforcement of the Federal Food, Drug, and Cosmetic Act, and related statutes, which will best serve the interests of the country." Funds for the study amounting to $21,000 were set aside from a special appropriation made by the 83rd Congress shortly before its adjournment.

Program Outlined for Barley Meeting Jan. 24

MILWAUKEE — Program plans have been completed for the barley improvement conference at Milwaukee's Schroeder Hotel, Jan. 24, sponsored by the Malting Barley Improvement Assn., Milwaukee, and the Malt Research Institute, Madison, Wis.

A. B. Hessburg, president of the improvement association, and vice president, Froedtert Malt Corp., Milwaukee, will open the program, and F. E. Raraty, president, Albert Schwill & Co., Chicago, and member of the association's board of directors, will preside.

Reports on barley testing, breeding and developments from Wisconsin, Montana, North Dakota and other midwest areas will be given.

Herbert H. Ladish, president, Ladish Malting Co., Milwaukee; Robert A. Uihlein, Jr., vice president, Jos. Schlitz Brewing Co., Milwaukee, and Dr. Warren Weaver, director, Division of Natural Sciences and Agriculture, Rockefeller Foundation, New York, will be on the evening program following the banquet at 6 p.m.

Douglas Bagnell Named Deputy Head of CEA

WASHINGTON—The appointment of Douglas B. Bagnell as deputy administrator of the Commodity Exchange Authority has been announced by the U.S. Department of Agriculture. He formerly was assistant administrator in charge of compliance.

Rodger R. Kauffman, CEA administrator, pointed out that Mr. Bagnell has had more than 20 years' experience in the investigation of futures trading operations and the preparation and presentation of evidence in administrative and criminal proceedings under the Commodity Exchange Act. He was an accountant before entering government service in 1931.

1. DPPD
2. Methionine
3. Arsonic Acid

3 new safeguards added to

Pillsbury's Starting Feeds

Dr. Morrison brings to Pillsbury a wealth of feeding knowledge from a background of practical farm management and feed science research.

He is a partner in the publication, Morrison's "FEEDS AND FEEDING."

A doctor of veterinary medicine and doctor of animal nutrition, he has taught at Cornell University, the University of California and the University of Georgia.

Now! Big news for Pillsbury Feed Dealers ...just in time for Spring tonnage sales!

Here's the full story by Dr. Spencer H. Morrison
(of Pillsbury Mills)

We're convinced the surest way to build better feed customers is to help them check costly setbacks that waste feed and kill young birds. Test after test proves that's the best way to boost feed conversions and profits—for you and your customers. That's why we at Pillsbury offer you these 3 new safeguards:

1. DPPD, now added to Pillsbury's BEST Chick Starting and Broiler feeds *at no extra cost*, stabilizes and promotes full utilization of vitamins A, D, E, and K.

2. Methionine—vital amino acid. Extra amounts now added to Turkey Pre-Starter and broiler feeds to improve conversion, feathering and market finish.

3. Arsonic Acid, also at *no extra cost* in Pillsbury Chick and Turkey Starting Feeds. Broiler feeds, too. Improves feed conversion—especially at times of stress.

Here's how you can share this Pillsbury leadership

As Pillsbury's partner in your community you can be first with the best feeding service. Ask your Pillsbury feed salesman about the 14 ways in which Pillsbury supports your local selling operation. Write or wire direct to our Clinton, Iowa, Sales Headquarters.

We're partners in selling

Pillsbury's BEST Feeds

made even better...3 ways

Pillsbury Mills, Inc., Feed & Soy Division, Headquarters: Clinton, Iowa, Sales Headquarters

"SNOW-FLAKE"
OYSTER SHELL

Make Your Customers
GOOD Customers... all year 'round

SUPREME Brand
Condensed BUTTERMILK
HERBERT K. CLOFINE, Inc.
MILK PRODUCTS
612 Bulletin Bldg. Phila. 7, Pa.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Whitmoyer PRODUCTS OF SCIENTIFIC MERIT OFFER YOU EXTRA PROFITS
Investigate today. Write to Dept. F.
WHITMOYER LABORATORIES, Inc.
MYERSTOWN, PENNA.

NEW PRODUCT NEWS

Critical Need for Safe, Dependable Mixing Equipment For Micro-Ingredient Blending Met by Strong Scott!

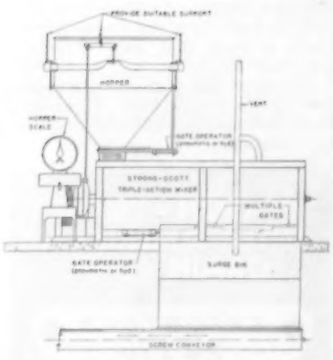
Strong-Scott Triple Action Mixer Cuts Horsepower Requirements Up to 50%!

Because of the unit construction and superior efficiency of the speed reducer driving arrangement, the new Strong-Scott Triple Action Feed Mixer not only cuts labor costs but increases overall production and capacity. It does a finer, faster job with up to 50% less H.P. in a minimum of time!

In **custom operations** a complete batch can be loaded, mixed and sacked in less than 15 minutes!

When used in **commercial installations** with a hopper scale and surge bin, it can produce 7 to 8 batches **every hour.** Multiple gates, activated by hydraulic or pneumatic cylinders, can empty the mixer in as little as **10 seconds!**

The unique feature of this machine is that the mixtures are so evenly and thoroughly blended, they can stand up under the most critical laboratory analysis.

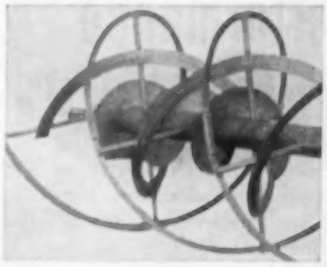


HUGE CAPACITY, LOW MAINTENANCE

The new Strong-Scott Triple Action Feed Mixers are available in ¾ to 4½-ton capacities which can handle 50 to 300 cu. ft. of 30-lb. material in one load. They are capable of turning out 1500 to 9000 lbs. of precision mixed material in one batch! Speed of operation, huge capacity per hour and low maintenance are outstanding features of the Triple Action Mixer! These are the answers to high production requirements of modern commercial plants!

From the loading hopper to the sacking operations the Strong-Scott Triple Action Feed Mixer does a better job on 25% to 50% less H.P. than machines of similar size. At the same time it gives the customer a perfectly blended end product!

On the drive end of the new Strong-Scott Triple Action Feed Mixer is a planetary gear speed reducer which drives the mixer shaft and permits driving from a motor or lineshaft without resorting to a countershaft to reduce speed. This reducer requires little attention, as the gears in it run in a bath of oil and after the chamber is once filled, the oil is merely maintained at a pre-determined level.



CENTER METAL SPIRAL

The center metal spiral, attached to the cylinder causes a movement that keeps the center core moving and assures a complete folding of the material into itself — thousands of times during a 3-minute mixing period! This center spiral flight keeps the core of the feed moving so that the inner and outer ribbons, conveying in opposite directions, thoroughly fold in many ingredients. No other action can match the efficiency. The features utilized by the Strong-Scott Triple Action Feed Mixer make it the most versatile machine of its kind! It's easily installed at low cost —requires less H.P. and does the best possible uniform mixing job in minimum time.

When used for either custom operation or commercial installation its rugged construction assures dependable, high capacity performance. In commercial installations when used with a hopper scale and surge bin the new Strong-Scott Triple Action mixer produces an end product unequalled. It's a machine that was designed to meet the need of the custom or commercial operator!

The new Strong-Scott Triple Action Mixer is ruggedly constructed for dependable performance, less maintenance and longer life under the severest production conditions!

Specially Designed Machines Meet Nutritional and Product Standards!

GREATER VERSATILITY WITH NEW PRE-MIXER

A highly versatile Pre-Mixer is the newest addition to the mixer line of the Strong-Scott Mfg. Co. It is designed to meet the new developments in nutrition and feeding practices which are continually forcing higher tolerances. Premixes are becoming increasingly critical. Tolerances accepted a few years ago, no longer meet the needs of the modern feed. Precision compounding and concise micro-nutrient mixing is the rule of the day. With the development of this new Strong-Scott Pre-Mixer, premixes, which are universally necessary in modern day feeds, can be uniformly distributed in starter-

grower feed, layer-breeder feeds, various hog feeds and specialized mixes such as calf feed and dog food!

Practically every feed contains vitamin supplements and micro-nutrients. Many feeds contain drugs which require absolute dispersion in the mix. The new Strong-Scott Pre-Mixer is the most practical way to disperse these micro-nutrients in a feed. It's safe and dependable.

In premix manufacture, the old fashioned method of measuring by volume is obsolete. Compounding (the proper proportioning) of various ingredients, is the vital first step of premixing operations and must be accurately carried out. Mixing is the other vital phase of the premix production. Good dispersion of different types of ingredients requires great versatility of the machine being used. The new Strong-Scott Ribbon type Premixer is the most versatile and inexpensive machine on the market and gives the best uniform results when mixing all types of ingredients. The special design of its Triple Action Agitator Cylinder keeps the center core of the feed moving toward the outer ribbon and the center spiral combined with the inner and outer ribbons gives excellent and reliable dispersion of ingredients in a minimum of time.

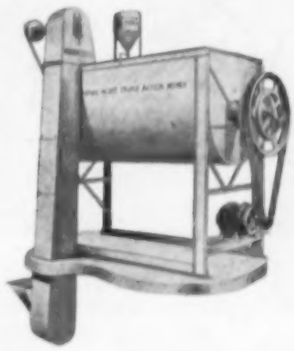
Manufacturers know that multi-stage pre-mixes give the best results. Greater flexibility results, too, if the vital ingredients are incorporated in individual basic pre-mixes and later combined into specialized pre-mixes.

The Strong-Scott Horizontal pre-mixer was designed to meet the necessity of pre-mixing modern day feeds. It has the versatility to pre-mix all types of ingredients. Its safe, dependable operation assures a thorough job wherever premixing equipment is needed and used.

Practically every feed contains vitamin supplements and micro-nutrients which require accurate dispersion in the mix. The close tolerances required in today's technical formulations cannot be made by old fashioned mixing equipment! Versatile machines of high capacity and low horsepower requirements are the rule of the day!

The market for these supplemented feeds is continually growing. The demand is greater — and feed manufacturers are faced with the problem of improving quality and increasing production. Finding the equipment, versatile enough to mix all types of ingredients into mill or mixed feeds has become a critical problem among formula feed manufacturers. A new product development committee, headed by R. R. Strong, was organized at the Strong-Scott Mfg. Co.

R. R. Strong



Above is an illustration of the new Strong-Scott Triple Action Feed Mixer used for custom installations. When combined with a loader and sacker this machine is highly versatile. The unit construction cuts labor costs—cuts H.P. requirements 25% to 50% and can load, mix and sack a batch in less than fifteen minutes.

The Strong-Scott Mfg. Co. with a critical eye on the nutritional and product standards required by industry has developed specially designed machines to manufacture the mixtures needed to meet this modern day demand for nutritious feeds.

Featured on this page are some of the results of research and development as reported earlier in Feedstuffs.

There is a Mixer for every need, size or capacity which can uniformly distribute micro-nutrients and vitamin supplements into feed!

STRONG-SCOTT MFG. CO.
451 Taft St. N.E.
Minneapolis 13, Minn.

A PROFIT FOR YOU
FROM YOUR FIRST CALL TO
BILL MERRITHEW

Jobbers of ALFALFA: Dehydrated and Sun Cured, LINSEED OIL MEAL, BEET PULP, SOY BEAN OIL MEAL and FERTILIZERS

B/M CO.

Bill Merrithew Co.

KNOWN FOR RELIABLE SERVICE

PHONE: WALNUT 2-0111 TELETYPE: MP 426
5009 EXCELSIOR BOULEVARD, MINNEAPOLIS 16, MINNESOTA

We have . . .
Ray Ewing
PERFORMANCE
PRE-MIXES

Distributed in Arkansas, Oklahoma and Texas by
The Tommy Thompson Co.
3617 Dryden Road — Fort Worth, Texas
Telephone: WHaster 0005

Research to Be Reported At Cottonseed Clinic

NEW ORLEANS—Reports on new developments in cottonseed processing and the use of cottonseed products will be presented at the fourth Cottonseed Processing Clinic to be held Feb. 7-8 at the Southern Regional Research Laboratory, New Orleans.

Sponsoring the clinic are the Southern Utilization Research Branch of the USDA and the Valley Oilseed Processors Assn. Staff members of the Southern Laboratory and industry representatives will be on the program.

Among the reports will be talks on cottonseed meal. Dr. A. M. Altschul of the laboratory staff will review research on chemical methods of measuring the nutritive value of cottonseed meal. M. F. Stansbury will discuss free gossypol and protein solubility.

Discussions of cottonseed cleaning and other subjects also are planned.

Official Warns Against Feeding Bag Cleanings To Swine and Cattle

AMHERST, MASS. — A warning against the use of swine and cattle feed cleaned from used feed bags was made recently by John W. Kuzmeski, head of the Feed Control Service at the University of Massachusetts in Amherst.

"Bag cleanings are sold as cattle feed at a fraction of the cost of regular feed ingredients and mixed feed, so dairymen are tempted," Mr. Kuzmeski said. "However, such feeds are dangerous for swine, dogs and dairy animals since there may contain harmful drugs.

"Most of these low-priced cleanings come from poultry feeds which contain drugs to reduce disease, but which are harmful to animals though not to poultry."

One sample found in the Feed Control Service contained over 100 parts per million lead and over five tenths percent of poultry drugs. The drug content, says Mr. Kuzmeski, was about 20 times the amount that causes poisoning of animals. The lot was actually fed to swine and caused the death of several.

Similar cases of poisoning have been reported from New York, Virginia, Maryland and California, he noted.

The recent use of diethylstilbestrol in beef cattle fattening feeds further increases the hazard in the use of bag cleanings as feeds, Mr. Kuzmeski pointed out. This hormone is recommended only in fattening feeds and has no place in feeds for breeding stock, he said.

Iowa Feed Men Hear Talk on Stilbestrol

CEDAR RAPIDS, IOWA — Dr. William H. Hale, Iowa State College, discussed feeding of stilbestrol to cattle at a meeting of the Cedar Rapids Grain & Feed Club Jan. 12. Slides also were shown.

A total of 114 feed and grain men from firms in at least 20 eastern Iowa communities attended the dinner meeting.

CDP

CORONET
DEFLUORINATED
PHOSPHATE

rates *highest* in South Dakota turkey poult diet performance

An approved report of the South Dakota Agricultural Experiment Station (Journal Series No. 312) rates Defluorinated Phosphate B (CDP) in first place among 15 phosphorus supplements tested.

The South Dakota investigators ran five experiments to determine the availability of phosphorus from various sources in feeding Beltsville White turkey poults from day-old to four weeks of age. The phosphorus level of the basal diet was approximately .06 percent, thus requiring the poult to obtain the major portion of his phosphorus requirements from the phosphorus supplement.

Results were measured in weights per poult, bone ash percentages and mortality. Table 5, reproduced below, shows the combined ratings of all 15 phosphorus supplements. Defluorinated phosphate B is CDP.

Rating of the phosphorus supplements used with respect to body weight, bone ash and mortality when dibasic calcium phosphate is set equal to 100 and when these supplements supplied 0.8 percent levels of phosphorus to the poult diet.

Dibasic calcium phosphate U.S.P. XIV	100
Defluorinated phosphate B	101
Monobasic calcium phosphate	97
Defluorinated phosphate C	94
Defluorinated phosphate A	75
Tribasic calcium phosphate N.F. IX	73
Steamed bone meal	75
Beta tricalcium phosphate	60
Commercial dicalcium phosphate No. 2	66
Commercial dicalcium phosphate No. 1	63
Imported rock phosphate A	0
Imported rock phosphate B	0
Colloidal phosphate No. 1	0
Colloidal phosphate No. 2	0
Colloidal phosphate No. 3	0

The South Dakota investigators chose 0.8 percent level of phosphorus because this level was below optimum growth requirement and would provide a more critical assay of the availability of the phosphorus sources.

The South Dakota report summary (in part) reads:

"Poults appear to be more sensitive to source or composition of phosphates than do chicks and this is attributed in part to the difference in growth rates."

"Considerable variation in performance was noted between defluorinated phosphates used and between the dicalcium phosphates which may result from the original source of the material or the processing of the phosphate, or both."

Your request will bring a copy by return mail of the complete South Dakota report covering the above trials.

This Report appeared in Poultry Science Volume XXXIII, No. 3

Coronet Phosphate Company

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED • NORFOLK 1, VIRGINIA

SINASON - TEICHER
INTER AMERICAN
GRAIN CORP.

EXPORTERS
GRAIN
FEEDS
FLOUR

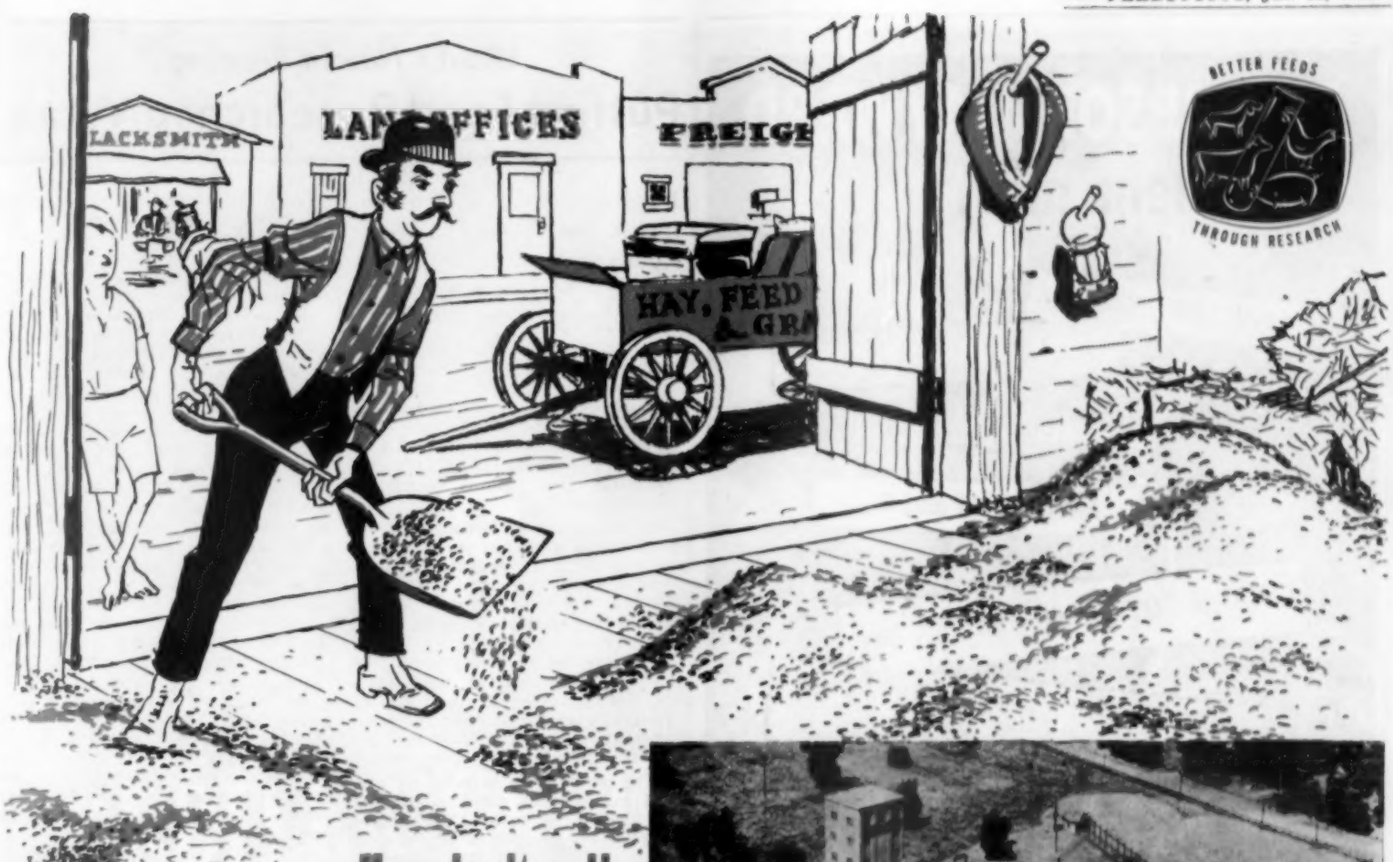
Wire Us Your Offerings

Telephone HAnover 2-9690
Teletype NY 1-3288

New York Office—50 Broadway

Vitamin Antibiotic
PRE-MIX
"PLUS" for swine, poultry, cattle.
Also custom pre-mixes.
Carroll Swanson Sales Co.
620 Des Moines Bldg., Des Moines, Iowa
Distributors and Sales Agents Wanted
Protected Territories.

PIG MAMA
Builds Business for Dealers
Write for Details
STALEY MILLING CO.
KANSAS CITY 14, MO.



BETTER FEEDS THROUGH RESEARCH

You don't sell 'horse-and-buggy' feeds ... and you can't sell with 'horse-and-buggy' methods

Nobody regrets the "good old days" of hit-or-miss hand mixing . . . there is just no comparison with today's scientific feed formulation to produce more meat, milk and eggs.

The alert feed manufacturer now offers a *complete feeding program*, such as that developed with Borden's natural-source fortifiers and supplements, specifically designed to do a *maximum, step-by-step nutritional job*. Every ingredient is scientifically laboratory-tested, thoroughly field-proven in Borden's basic research program in natural-source feed fortification.

AND . . . to insure the success of that feeding plan, Borden's offers its new *Four-Point Program*. In addition to the best in natural-source supplements, there is a skilled formulation and technical service staff to enhance the high quality and usefulness of Borden's supplements, top-notch advertising and merchandising and farmer education aids to help you sell more feed.

For this effective, realistic quality-selling program, send in the coupon today.

THE BORDEN COMPANY
FEED SUPPLEMENTS DEPARTMENT
350 Madison Avenue
New York 17, N. Y.

Gentlemen:
Please send us complete information about your *NEW* four-point program.

Name .....
Firm .....
Address .....
Town .....

THE *Borden* COMPANY
FEED SUPPLEMENTS DEPARTMENT
350 MADISON AVENUE • NEW YORK 17, N. Y.

Borden IS BASIC IN FOOD AND FEED RESEARCH

THOMPSON-HAYWARD
has them all . . .

CUSTOM MIXES
TRACE MINERAL PRODUCTS
MINERALS
ANTIBIOTICS and B_{12}
CHOLINE 70% Liquid and 25% Dry
NIACIN and CAL PAN
RIBOFLAVIN
FEED OILS A & D, VITAMIN A oil,
DRY VITAMINS A, and A & D
DRY VITAMINS D_3 and D_2
VITA-RICH PRODUCTS

A complete vitamin stock at convenient locations for your entire vitamin program — prompt delivery with economy and quality assured.

for the complete line
of feed supplements

THOMPSON-HAYWARD CHEMICAL COMPANY

KANSAS CITY 6, MISSOURI

HOUSTON • ST. LOUIS • TULSA • OKLAHOMA CITY • SAN ANTONIO • DES MOINES • DALLAS • LOUISVILLE
BOSTON • DES MOINES • CHICAGO • WICHITA • DAVENPORT • DENVER • LITTLE ROCK • MINNEAPOLIS • OMAHA

T-H QUALITY CHEMICAL SERVICE CO.

What's New in Feeding
Putting Feed Research to Work

Feeding Space Requirements for Young Turkey Poults

● W. O. Wilson and A. Woodard, University of California, Davis; Poultry Science, Vol. 33, pages 1278-1279 (November, 1954)

This test was conducted to determine whether the amount of feeder space made available to poults from day-old to eight weeks of age had any effect on the growth rate. Two tests were conducted. In each test one lot was allowed 1 in. of feeder space per bird while a second lot was allowed 2 in.

In the first test, feeders used for the entire 8-week test period were 4 in. wide and 2 in. deep and were accessible from both sides. In the second test, the same feeders were used for the first three weeks, after which G-type feeders that hung on the side of a wire runway were used. The feeders were filled at least twice daily and oftener if required. The feeding space was adjusted when mortality occurred to maintain either the 1 or 2 in. of space being tested.

The poults were brooded on wire and gas brooders were used during the first three weeks. One hundred and seventy-two poults were started in each lot in the first test and 161 poults were started in each lot of the second test. (No mention is made as to the breed or strain of turkeys used.) All birds were fed the same standard all-mash turkey starter.

No significant differences in mortality occurred between the two test lots in each test. Consequently, it was concluded that the amount of feeder space available to poults did not affect the mortality rate.

In the first test there were no significant differences in the growth rate at the end of the first four weeks. However, at the end of eight weeks those birds having only 1 in. of feeder space weighed 1341 gm. (2.96 lb.) while those receiving 2 in. of feeder space weighed 1455 gm. (3.20 lb.) or were ¼ lb. heavier. There was no difference in the amount of feed eaten between the two lots. The average daily feed consumption per bird in each lot was 0.138 lb.

In the second test those birds having only 1 in. of feeder space weighed 415 gm. (0.92 lb.) at four weeks of age and 1417 gm. (3.12 lb.) at eight weeks. The respective weights of the poults receiving 2 in. of feeder space were 445 gm. (0.98 lb.) and 1579 gm. (3.48 lb.). In this test those birds having the greater amount of feeder space consumed more feed than those with only 1 in. of feeder space. The average daily feed consumption per poult was 0.158 lb. and 0.139 lb. for the birds with 2 in. and 1 in. of feeder space, respectively.

The authors emphasized that it was extremely difficult to keep the feeders filled in the lots of poults

(Continued on page 24)

SUPERIOR PACKAGING for the MILLING INDUSTRY SINCE 1870

Fulton BAG & COTTON MILLS

Atlanta · Minneapolis · New Orleans · New York City · Dallas · Savannah · St. Louis · Winter Haven, Fla. · Denver · San Francisco · Los Angeles · Phoenix · Kansas City, Kans.

for maximum profits

DEPEND ON FOXCO
PRODUCTS OF PROGRESS

Complete line of specialized products for greater profits in the poultry industry backed by a name known and respected for 80 years.

- Foxco Flavitein
- Servall-Staxdry
- Foxco QualADee Vitamin Oils
- National Alfalfa Meal
- EGGSHELL BRAND Pure Reef Oyster Shells
- Gran-I-Grit
- Smith's No. 1 Steam Dried Menhaden Fish Meal
- Dicalcium Phosphate
- Foxquin (Liquid)
- Aurofac Megasul Fortafeed Products

Write for Foxco Flavitein formulas

The FOX Company

NEWFIELD, N. J., Phones: Vineland 9-4400, 9-4401, 9-4402

TURKEGRAM

PJ

BROILER GROWING

Live Stock Producer

MILLIONS of MESSAGES- in these publications

tell your customers that

PRO-GEN®

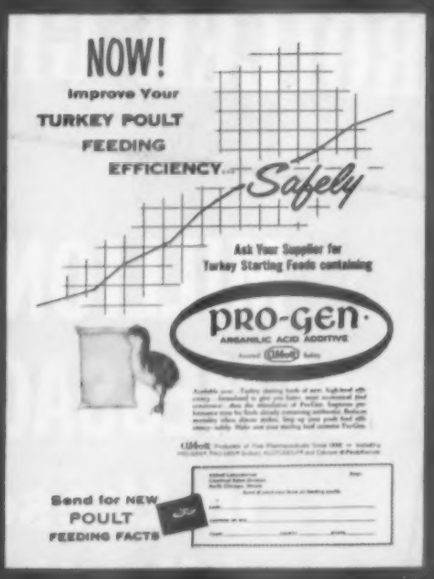
Steps up Feed Efficiency

Safely!

Abbott

broilers

poults



pigs

NOW!
Improve Your
BROILER FEEDING
EFFICIENCY... Safely
Ask Your Supplier for
Broiler Feeds containing
PRO-GEN
ARSANILIC ACID ADDITIVE
Send for NEW
BROILER
FEEDING FACTS

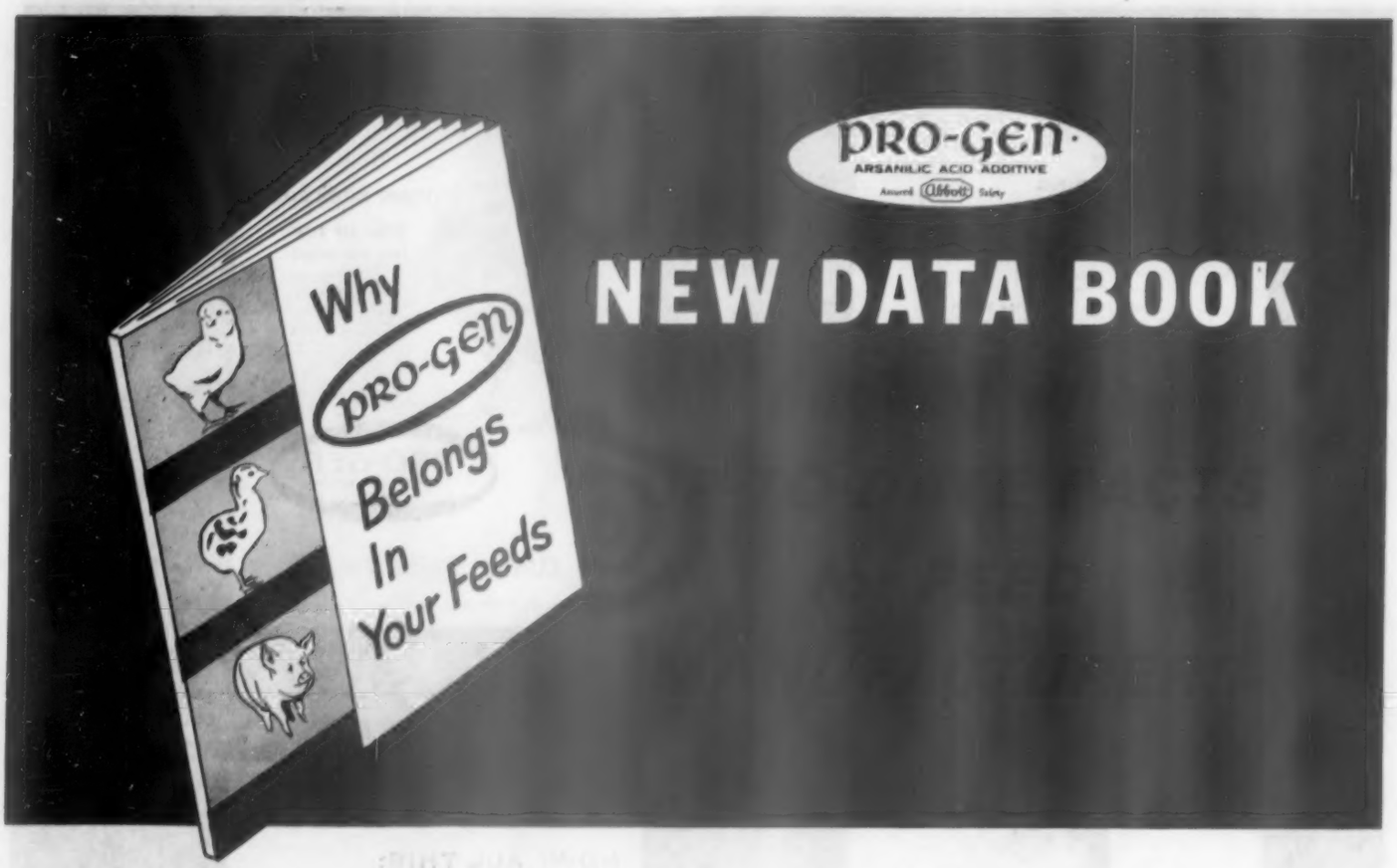
NOW!
GROW YOUR BROILERS
faster and safer
than ever before
PRO-GEN
ARSANILIC ACID ADDITIVE
Abbott
ABBOTT LABORATORIES—Chemical Sales Division—North Chicago, Illinois

NOW!
START YOUR POULTS
faster and safer
than ever before
PRO-GEN
ARSANILIC ACID ADDITIVE
Abbott
ABBOTT LABORATORIES—Chemical Sales Division—North Chicago, Illinois

NOW! ALL THIS:
• high-speed growth
• top feed efficiency
• premium feathering and finish
AND SAFETY, TOO
with Turkey
Starting Foods containing
PRO-GEN
ARSANILIC ACID ADDITIVE
Send for NEW
POULT
FEEDING FACTS

NOW!
STIMULATE
GROWTH.... Safely
PRO-GEN
ARSANILIC ACID ADDITIVE
Send for NEW
PIG
FEEDING FACTS

NOW!
SPEED PIG GROWTH... Safely
Ask Your Supplier for PIG
Starting & Growing Foods
containing
PRO-GEN
ARSANILIC ACID ADDITIVE
Send for NEW
PIG
FEEDING FACTS



MARYLAND EXP. STATION
research shows increased return of $15.17 per ton of feed or $38.23 per 1000 broilers when PRO-GEN was added to poultry rations.

NEW U. OF WISCONSIN STUDIES
show wide safety margin—up to 10 times recommended feeding levels—of PRO-GEN in chicks.

SPECIAL REPORT ON KLOTOGEN F
explains how KLOTOGEN F—superior new form of water-soluble vitamin K—prevents hemorrhage in poultry.

PRO-GEN FOR LAYERS
Latest university research findings illustrate how Pro-Gen in laying rations can produce more eggs and more eggs per pound of feed.

COLORIMETRIC TEST
permits feed manufacturer to determine Pro-gen content of feeds quickly, inexpensively.

BROILER, TURKEY, SWINE
feeding results demonstrate how Pro-Gen alone, and in combination with antibiotics and coccidiostats, promotes feed efficiency and general health of animals.

SEND COUPON TODAY

Abbott Laboratories Dept. FS-1
Chemical Sales Division North Chicago, Illinois

Send me, without cost or obligation, your new Pro-Gen. book described above. I would also like additional information on:

☐ Klotogen F ☐ Calcium dl-Pantothenate

Individual _____

Title or Position _____

Firm Name _____

Address _____

City _____ Zone _____ State _____

Abbott

For makers of Modern Feeds

There's a Difference

WINDY KRAMER, the lanky brown-haired routeman, came in a little early that winter day and made his way slowly into Joe Brooks' office. The feed dealer was engaged in cutting a stencil for direct mail copy, but laid aside this work as Windy took a chair.

"Hi, Windy, what's up?" he asked.

The route man grinned, "Not too much," he replied, "but I've been doing a lot of thinking lately."

"Who doesn't?" Joe smiled. "This is a complex world. Ask Milt. You know what he thinks about 50% of the time."

Both men laughed at this reference to Milt Peters' known weakness for pretty red-headed girls.

"You know," commented Windy, "farmers are awfully queer fellows in one way. They like to beef when times are good, and they also beef when times are bad on some lines. You never heard a farmer say he's sittin' on top of the world, like some other folks do. And on the route I get the full force of these 'beefs'."

"I suppose you do," Joe said. "But I don't think you can change farmers."

"I don't know," mused Windy, "that cost per dozen egg contest you're running has got me thinking. Gee, a lot of farm women are interested. They're wearing out pencils jotting down their costs. They want to win a free bag of feed."

Joe smiled. "Yes, I'm happy about that contest and how it's taking hold. If we can get enough accurate records to show how much it costs to produce a dozen eggs, and that farmers can make some profit at these figures despite lower egg prices, then we've done something very constructive."

Milk Cost Promotion

"Sure," agreed Windy, "and I have been thinking about something we can do on a milk cost promotion, too. The egg cost plan got me thinking."

"So one idea leads to another," grinned Joe. "That's the value of sales training and the launching of sales promotional ideas. What is your milk cow idea, Windy?"

"Well," declared the tall employee, "farmers are always telling me that they can't make any money selling milk at around $3.25 to $3.50 cwt. just as they have been complaining about the no profit basis on eggs right now. And yet most of them continue their milking herds, buy new cars and seem to be getting along all right. I think I have figured out a way to spike this no-profit talk on milk."

"How?"

Windy Kramer chuckled. "I want Smiley Johnson to draw up a big sign for me which we can post in the store, showing the production records of two herds of milking cows. One will be a herd of 20 cows which produce only 5,000 lb. of milk per cow. And we can quote dairy experts as saying a cow which produces only 5,000 lb. of milk doesn't return any profit to the owner over feed costs."

"Yes?"

Break-Even Point

"Well, our dairy farmers here think they're pretty alert. They all say they have cows that produce more than 5,000 lb. of milk per year. We've got to drive home the point that 5,000 lb. of milk is the break-even point. On any production over that figure the herd owner begins to make some profit."

Joe grinned. "In other words when the farmer says he isn't making any money with his cows," he said, "you

RILEY Feed Company

BROKERS—
COMPLETE LINE OF FEED INGREDIENTS
939 BOARD OF TRADE
KANSAS CITY 6, MO.
BALTIMORE 2960

SAFE — POSITIVE PROTECTION AGAINST COCCIDIOSIS with Arzene
EASY TO MIX IN YOUR MASH
Manufactured by
GEO. H. LEE CO. Omaha, Nebr.

SPLIT SECOND SERVICE
Place your next order with us. Call K.C. Baltimore 5115—Omaha Harney 4806.
BATES Grain Co.
Kansas City • Omaha

Mr. Feed Manufacturer—

YOU GET ACTION AT

. . . Action that provides you with these powerful feed building and feed selling aids!

Outstanding one-bag vitamin and trace-mineral products for fortification of poultry and livestock feeds. You supply proteins and other feed ingredients to make YOUR OWN BRAND NAME FEEDS!

Feed tag registrations and printing of tags for Your Brand Name Feeds!

Formula Service to help you build nutritionally complete feeds with full emphasis on economic advantages of ingredients!

Biological and laboratory testing of feed ingredients and finished feeds!

Exclusive programs . . . Ultra-Way Method of Internal Culling and Ultra-Life Livestock Service!

Schools for training your employees in on-the-farm service work and feed salesmanship!

A complete advertising service . . . for Your Brand Name Feeds . . . direct mail pieces and letters, folders, posters, newspaper mats, booklets, radio continuity, etc.!

. . . Yes, YOU get action because everyone works for you at Ultra-Life to help YOU build top quality feeds and really sell them!

Why not let us explain our program in detail to you? You be the judge as to whether we have something you can use to advantage! Just drop us a line, no obligation, of course.

Ultra-Life LABORATORIES, Inc.
35th & Walnut Streets, East St. Louis, Illinois
One of the Country's Oldest and Largest Manufacturers of Vitamin and Trace-Mineral Products

think he means he isn't making enough for his effort."

"That's it," said Windy, "and yet they try to give us the impression they aren't making any profit at all. On that big sign which Smiley can can make for us I'd also like to have him print figures about a second herd of 20 cows, where each cow produces 15,000 lb. of milk, a high actually accomplished in a Wisconsin herd. On this production basis each cow would return about $350 a year income to the herd owner over feed costs."

Joe nodded.

"Now farmers when they read that sign," calculated Windy, "are going to place their herd somewhere between the 5,000 lb. a year production per cow and the 15,000 lb. per year. Wherever they place their position, they are going to make some profit. And that is what I want them to realize."

Joe chuckled. "In other words, Windy, you think farmers are going to be ashamed to admit that they are foolish enough to keep cows which produce 5,000 or less lb. of milk per year?"

The routeman nodded. "Sure, and when we ask them if their cows are producing more than 5,000 lb. a year and they answer in the affirmative, then we can say that dairy experts say they should be making a profit, if they use efficient management practices."

Added Support for the Campaign

"Good," declared Joe, "and I think I can help that sign idea along by mentioning what you say in our next direct mail bulletin. A headline in the copy can be 'Are You Making Any Profit on Your Dairy Herd? Check Your Figures Against Nationally Proved Records and See How You Should Come Out.' That should make a lot of farmers think, Windy."

"It sure should. Maybe it will make them realize that they are making some profit, and then they won't wail about losing money when they are actually making a profit."

Joe smiled. "I guess farmers are human just like business men and everyone else, Windy. All of us holler a lot about what we think we ought to get instead of being darn grateful for what we are getting and living on. All of us need real facts like you quoted to think about, to make us estimate our position more realistically. I wish Milt would be realistic about his redheads and figure that he should devote at least 10% more time to his job than he does to squiring redheads."

"Huh," said Windy, who was married and had five children. "What that guy needs is to get married to one of them redheads, have about eight kids and then have to buy a pair of shoes for each of them about every two months. Then he would buckle down and try to do some extra selling in this business to increase his bonus."

"Truer words were never spoken," Joe said solemnly. "That's a lesson all gay young blades—and old ones, too—have to look straight in the face, sooner or later."

FEED RESEARCH

(Continued from page 18)

having only 1 in. of feeder space. It is possible that these birds may have been inadequately fed even though the feeders were filled as many as six times daily.

It was concluded that turkey poults need at least 2 in. of feeder space at ages of one day to eight weeks.

COMMENTS:

The above California investigators are to be commended for conducting this type of experiment. Many of our investigators are so intent upon finding something "new" that will greatly improve the performance of turkeys that some of the poor management practices are overlooked. Yet the benefits that can be derived from improvement of management practices can be just as great or more so, than including some unknown growth factor, using higher levels of vitamins, etc.

In the one test reported above the poults weighed an extra ¼ lb., just by increasing the feeder space. Most feed manufacturers recommend from 2 to 4 in. of feeder space per poult. Yet, we all know of many turkey growers who actually provide as little as 1 in. of feeder space per poult. Even though the above California investigators did not find anything new, they did demonstrate the importance of giving adequate feeder space to poults. There is a need for many more experiments of this type.

It is doubtful that even 2 in. of feeder space is adequate for our large fast growing strains of turkey poults today. Many turkeys produced today will weigh as much as 5 lb. at eight weeks, which is considerably heavier than the birds in the above California tests. These large birds probably need at least 3 in. of feeder space and may benefit from even more.

In order for our modern feeds to be most efficiently utilized, it is essential that our management recommendations are kept current. At least feeding and watering space recommendations have changed in the last three to five years. Our nutritional, breeding and disease control advances are of little value if other management practices do not keep pace.

"Our Purina Dealer EARNS our business"

say Mr. and Mrs. Ivyl Graham

"We depend on our Purina Dealer for help with our poultry flock," say Mr. and Mrs. Ivyl Graham, Route 4, Bethany, Missouri. "The service of our dealer, Bethany Mill and Implement Co., Inc., is just as close as our telephone. They help us with de-beaking, culling and advice on many other management and sanitation practices."

The Grahams say, "One service call recently saved us hundreds of dollars. Kent Brough, our Purina Serviceman, recommended a Purina product that saved all but a few out of our large flock. This free service of our Purina Dealer has been worth a lot to us."

"Our business has grown 400% in 3 years"

"I am proud of our Purina business growth in the past few years," says Mr. Hendren, head of Bethany Mill and Implement Co., Inc.

"In 1950, Ed Landes and O. W. Weller joined our corporation. Since then we have followed Purina's policy of customer service closely and our business has increased each year. We appreciate Purina's belief in the independent feed dealer."

* * * *

You can get details on the Purina franchise by writing: Ralston Purina Company, 1602 Checkerboard Square, St. Louis 2, Mo.

Real Service to the Farmer

FLAMBO FEEDS

MIXED FEEDS • PELLETS
CUBES • ROLLED OATS
CRIMPED OATS
FEEDING OATMEAL
OAT GROATS
PULVERIZED OATS

FOR SAMPLES OR QUOTATIONS—
Write, Wire
TELEPHONE 44
TELETYPE PHILLIPS 14

FLAMBEAU MILLING CO.
Phillips, Wisconsin

WORTH CROWING ABOUT!
HILLTOP AIDS FOR POULTRY
Hilltop Laboratories 710 Washington Ave. N. Minneapolis 1, Minn.

Pfizer sells the need—you sell the feed

HERE'S YOUR ENTRY TO NEW CUSTOMERS.

OFFICIAL ENTRY BLANK
Pfizer 3RD ANNUAL
$20,000
Livestock Judging Contest
Market Hogs... Laying Hens... Dairy Cows
his year your chances are greater than ever
to win. This may be your year to win.
432 BIG CASH & BOND PRIZES...
PLUS 18 ALL-EXPENSE TRIPS to Chicago at the time of the International Live Stock Exposition
★ 3 BIG CONTESTS TO ENTER
★ SEPARATE PRIZES FOR EACH CONTEST
★ SEPARATE PRIZES FOR JUNIORS AND SENIORS
★ ENTER 1 CONTEST OR ALL 3. Enter as many times as you wish.
★ JUST PICK THE BEST BIRDS AND ANIMALS FROM ACTUAL PHOTOS
★ NOTHING TO WRITE. No tricky slogans, jingles or statements to complete.
ENTER TODAY. Don't put it off. This year your chances are greater than ever—and this may be your year to win!

This year your annual Pfizer sales-building contest has been expanded to bring in poultrymen and dairymen as well as hog producers. It's being put behind the one item that's needed on almost every farm—the ideal "door opener" for your full line—*high level feed*. The next 3 pages show how this popular contest can help your dealers win new customers and new boosters for your brand.

The event that helps your dealers tell the feed story of the year

3rd Annual Pfizer $20,000

FOR HIGH LEVEL INTEREST AMONG FEED CUSTOMERS

. . . a chance to win one of the 432 big cash and bond prizes—18 free trips to the International Livestock Show in Chicago.

There's plenty of "come on" in this contest, plenty of excitement, and plenty of good solid reason why selling for high level feeds. Everybody will be wanting to enter. Every entry means a tag from a bag of high level feed—the feed that helps keep herds and flocks healthy, helps keep customers sold on your brand.

Remember, the best time to get new feed customers is when they have more baby pigs, baby chicks and young calves. That's when more feeders will be needing and trying high level feeds, too. Keep them from shopping around by keeping your brand out in front. This contest will help you.

When do they need a High Level Feed?
When Does it Pay to Switch to a High Level Feed?
Terramycin at high levels
How do High L now increase your profits later?
Terramycin at high levels

HERE'S HOW PFIZER IS PROMOTING THE CONTEST AND HIGH LEVEL FEEDS

4 Leading National Farm Magazines
- Country Gentleman
- Farm Journal
- Successful Farming
- Progressive Farmer

3 Leading Dairy Magazines
- Hoard's Dairyman
- Dairyman's League News
- Western Dairy Journal

2 Leading Hog Magazines
- National Livestock Producer
- Breeders' Gazette

6 Leading Poultry Magazines
- Poultry Tribune
- Broiler Growing
- American Poultry Journal
- Turkey World
- Broiler Journal
- Eastern Breeder

5 Thought Leader Magazines
- Better Farming Methods
- Ag Leader's Digest
- 4-H Club News
- County Agent & Vo-Ag Teacher
- American Farm Youth

16 Key Radio Stations
- WLS Chicago, Ill.
- KFEQ St. Joseph, Mo.
- WHO Des Moines, Ia.
- WMBD Peoria, Ill.
- WOW Omaha, Neb.
- WMT Cedar Rapids, Ia.
- WIBC Indianapolis, Ind.
- WLW Cincinnati, O.
- WCCO Minneapolis, Minn.
- WEAU Eau Claire, Wis.
- WIBA Madison, Wis.
- WKBH La Crosse, Wis.
- WKOW Madison, Wis.
- WSYR Syracuse, N. Y.
- WGY Schenectady, N. Y.
- WDOV Dover, Del.
- WJWL Georgetown, Del.
- WCEM Cambridge, Md.

. . . helps sell the feed that sells

your brand and your line

LIVESTOCK JUDGING CONTEST

FOR A HIGH LEVEL OF DEALER PARTICIPATION

A special dealer contest—his chance to win his weight in silver dollars . . . 150 other valuable prizes.

Dealers remember how the last two Pfizer Contests helped to get new users for Pig Starter. This year it helps them tell the big story of High Level Feeds. It's one that's easy to tell, easy to understand —one that means more profit for feeders as well as feed dealers. And the dealer has a contest of his own—the chance to win a silver dollar for every ounce he weighs. Could there be any better combination to whet the dealer's enthusiasm?

432 Big Cash and Bond Prizes—
Plus 18 Free trips to the International Live Stock Exposition in Chicago
THIS YEAR YOUR CHANCES ARE GREATER THAN EVER TO WIN IN
Pfizer
3rd Annual $20,000
LIVESTOCK JUDGING CONTE
Separate Set of Prizes for all three conte
Special contest and prizes for Juniors (boys, girls
ASK YOUR FEED DEALER FOR FREE ENTRY BLANK NOW
Just pick the best birds or animals from photos like these . . . Nothing to write . . . No statement to complete.
Fight Disease Feed for Profit
Terramycin
at high levels
Enter Pfizer's
$20,000
Contests

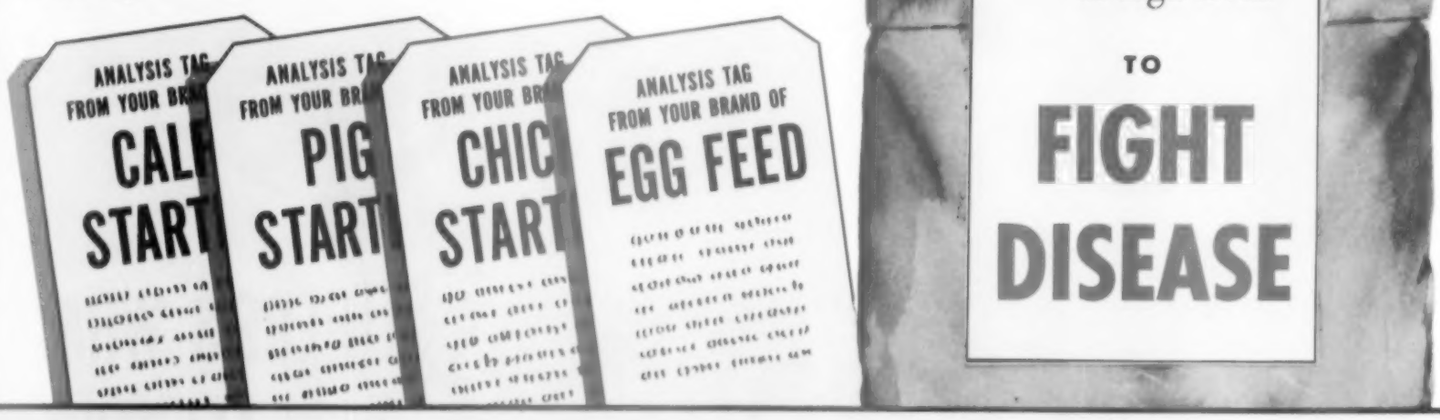
AND HERE'S WHAT PUTS ALL THIS TO WORK FOR YOU

A SALES BUILDING CONTEST KIT FOR EVERY STORE

Get one for each of your dealers. Kit comes in a handy package with full details of contest, wall display, entry blanks for customers, and for feed dealer. Advertising tells feeders to get entry blanks from their dealers. They're Free, so make sure your dealers are supplied with contest kits, entry blanks and a good stock of your brand of high level feed.

A TAG FOR EVERY BAG OF FEED...

This is what contestants will be looking for—the tag that tells them, "this is the feed that helps me fight disease." Sample Analysis tags for Oxytetracycline (Terramycin) mixes with specific therapeutic claims approved for use are available from Pfizer. (The Analysis Tag is what contestants send in.) Also available are "Fight Disease" tags like the ones shown on the bag.



To help your Feed Customers Fight Disease... Feed for Profit

Pfizer

Terramycin®*

*at high levels

Chas. Pfizer & Co., Inc.

Headquarters for Antibiotics and Vitamins for Animal Health and Nutrition

630 Flushing Ave.
Brooklyn 6, New York

1151 Chattahoochee Ave., N. W.
Atlanta 2, Georgia

425 N. Michigan Ave.
Chicago 11, Illinois

1500 16th Street
San Francisco 3, Calif.

®*Terramycin brand of Oxytetracycline*

Recent Advances in the Nutrition of Hens

By Dr. F. W. Hill
Cornell University

Periodic times of economic stress such as the one presently facing the poultry industry bring into sharp focus the necessity for high productive efficiency. It also is a primary goal in the science of animal nutrition, in which the practical benefits of research are most strikingly measured in increased efficiency.

In contrast to the extensive research of recent years in basic and applied aspects of chick and poult nutrition, there has been much less activity in the study of adult nutrition. Broiler production, profiting directly from research in chick nutrition, has gained greatly in efficiency. I believe it is a fair statement that egg production efficiency can gain more than broiler production in the immediate future from extensive research on its specific problems—partly because the present efficiency of egg production on farms is so far from its potential high.

The efficiency of production is related closely to the nutritional balance of the feeding program: the more accurate our knowledge of nutritional requirements, the higher our potential efficiency. The purpose of this paper is to review recent research that has a bearing on practical nutrition of hens.

EDITOR'S NOTE: The author of the accompanying article—Dr. F. W. Hill, professor of animal nutrition and poultry husbandry at Cornell University—points out that in contrast to the extensive research in recent years on chick and poult nutrition, there has been much less activity in the study of adult nutrition. Egg production efficiency, he notes, can gain more than broiler production in the immediate future from extensive research on its specific problems — partly because present egg production efficiency on farms is far from its potential high. Efficiency of production is closely related to nutritional balance of the feeding program, and this article is a review of recent research that has a bearing on practical nutrition of hens. The article is from a talk by Dr. Hill at the California Animal Industry Conference.

Energy

Through the studies of Heuser and co-workers, Bird and Whitson, Singsen et al. and Gerry, there has come a general recognition that rations low in fiber content and lower in energy value are more efficient for egg production than rations which are high in fiber content and low in energy value. Bird and Whitson were the first to attempt evaluation of differences in efficiency on a quantitative basis by using the expected feed requirement of hens, computed by the Byerly partition equation, as a basis for estimating relative efficiency. Using this approach, Lillie and co-workers showed a striking improvement in efficiency from the use of lard in a ration for layers.

Recent studies by Hill and co-workers at Cornell have been directed toward the quantitative evaluation of the effects of various energy levels in practical rations on rate and efficiency of egg production. These experiments have covered an energy range from 740 to 1030 Calories of productive energy per pound, within which most practical rations will fall. In one experiment, all-mash rations containing 740, 840, and 930 calories per pound, differing primarily in the choice of grain components, were compared under practical conditions in an 11-month experiment. A second experiment investigated higher energy levels, obtained by adding 2.5% and 5% stabilized industrial tallow with appropriate compensation to maintain protein level in a 940 calorie ration. In both experiments, egg production rate was superior with the higher energy levels only during cold weather; during the rest of the year, production rate was influenced very little by energy level.

These experiments, and others of a similar nature, do not provide a basis for estimating a minimum dietary energy level for maximum production rate, because environmental variables largely determine the adequacy of any given energy level. Under moderate climatic conditions, a low energy level (as 740 calories per pound) is as effective as a high level (as 940 calories per pound). In two of three years a level of 930-940 calories per pound, which is approximately the practical maximum which can be

Be Sure the DPPD You Use Is Over 95% Pure

DPPD

DEPENDABLE

Good-rite DPPD (N,N'-Diphenyl-p-phenylenadiamine) is effective because it has been proven dependable through tests in the laboratory and in the field. Good-rite DPPD aids in maintaining vitamin activity for longer periods — helps keep nutritionally valuable minerals in feeds from hastening the destruction of vitamins.

PROTECTS

Good-rite DPPD protects the natural tocopherols present in the basal rations, and has proved its efficiency and effectiveness as a stabilizer for carotene and vitamin A. Conclusions of recent tests report that DPPD is effective at levels of ¼ lb. per ton of feed when replacing pigment-producing grains with the non-pigment grains. Milo, kafir, and white corn might replace half of the yellow corn in a practical broiler ration without materially decreasing pigmentation of the shanks provided levels of 30% yellow corn, 5% good alfalfa meal and .0125% DPPD are used.

PROVEN

Toxicity studies show DPPD as a safe additive in poultry feeds in concentrations up to 0.025% in the final feed mix. Good-rite DPPD used at the rate of ¼ lb. per ton of feed effectively prevented encephalomalacia (crazy chick disease).

DRY

Good-rite DPPD is easy to use because it is dry and free-flowing. Economical to use because (1) its preservative and antioxidant qualities guard against vitamin loss, (2) protects against encephalomalacia when used at recommended levels and (3) apparently helps prevent pigmentation loss even when used in rations low in pigment producing factors.

Available Through All Ray Ewing Distributors and at 10 Convenient Warehouse Points Near You

LET GOOD-RITE DPPD PROVE ITS VALUE TO YOU!

Write • *Phone* • *Wire*

PY. 1-2195

The Ray Ewing Company

1097 South Marengo Ave. Pasadena 5, California.

McCabe Grain Company Limited
WINNIPEG, CANADA
LONDON, ENGLAND VANCOUVER

McCABE GRAIN
LONDON OFFICES
Schwarz & Co. (Grain) Ltd.
Victoria Products and Grain
(Overseas Agents) Ltd.

Every Good Feed
Get your supplies from
HENRY K. FAUST
Successor to King Brothers & Co.
The Bourse, Philadelphia 6, Pa.

SPECIFY
Columbia Calcium
COLUMBIA QUARRY CO.
1007 Washington Ave.
ST. LOUIS 1, MO.

reached by the use of high energy grains in usual formulations of layer rations, was sufficient for maximum production in the winter months at Ithaca. In the third year, 940 calories per pound was inferior to higher energy levels during cold weather.

More striking and more consistent than the effect on production rate was the effect of energy level on efficiency. Expressed either as feed requirement per dozen eggs, or in terms of relative efficiency computed in a manner similar to Bird and Whitson, efficiency increased with each improvement in energy level. Feed requirement per dozen eggs improved from 5.7 lb. per dozen for the 740 calorie ration to 4.1 lb. per dozen for the ration with 5% tallow; on a relative efficiency basis, the increase was from 82 to 110. Efficiency increased essentially linearly in the range 740 to 930 calories per pound, at a rate of about 10% for each 100 calories per pound.

The efficiency response to fat was also linear, increasing 2% for each 1% added tallow, in agreement with the observation of Lillie and co-workers. In comparison to the rate of increase in efficiency with energy level in the 740-930 calories range, the effect of fat was considerably greater than was expected from its energy value, 2100 calories per pound, from the Fraps data. The effect on efficiency indicates that its net value under these conditions was 2900 calories per pound, which is approximately 2¼ times the value of starch for the chicken.

Studies of energy in chick nutrition have shown that the basic mechanisms underlying the economic aspects of rations of different energy values are (1) the regulation of feed consumption mainly in accordance with energy requirements, which results in the high efficiency of rations high in energy value, and (2) the consumption of a higher energy intake as the ration increases in energy value, which results in increased deposition of body fat. The same general response to different energy levels is shown by hens, although the second effect is less striking than is the case with growing chicks. From the standpoint of economic efficiency, therefore, practical rations for hens should be formulated to provide the lowest cost per unit of energy, within the limits necessary, to assure meeting other nutrient requirements.

Protein

The literature on the protein requirement of layers, reviewed by Heuser and forming the basis of the requirement of 15% protein estimated by the National Research Council subcommittee on poultry nutrition, largely antedates the extensive changes in formulation practice that have come about in recent years. It has been questioned whether this amount of protein is sufficient at the higher energy levels generally in use today and for high production strains. Reid and co-workers reported that an 18% level of protein was superior to levels of 15% or 13% under their conditions. This may have been due to high environmental temperature. In contrast, Kinder and Day found levels of protein higher than 15% slightly detrimental in a study using White Leghorn and crossbreed pullets. Similar results with meat type New Hampshires were reported by Ringrose, Potter and Hatch who compared rations containing 15% and 18% protein.

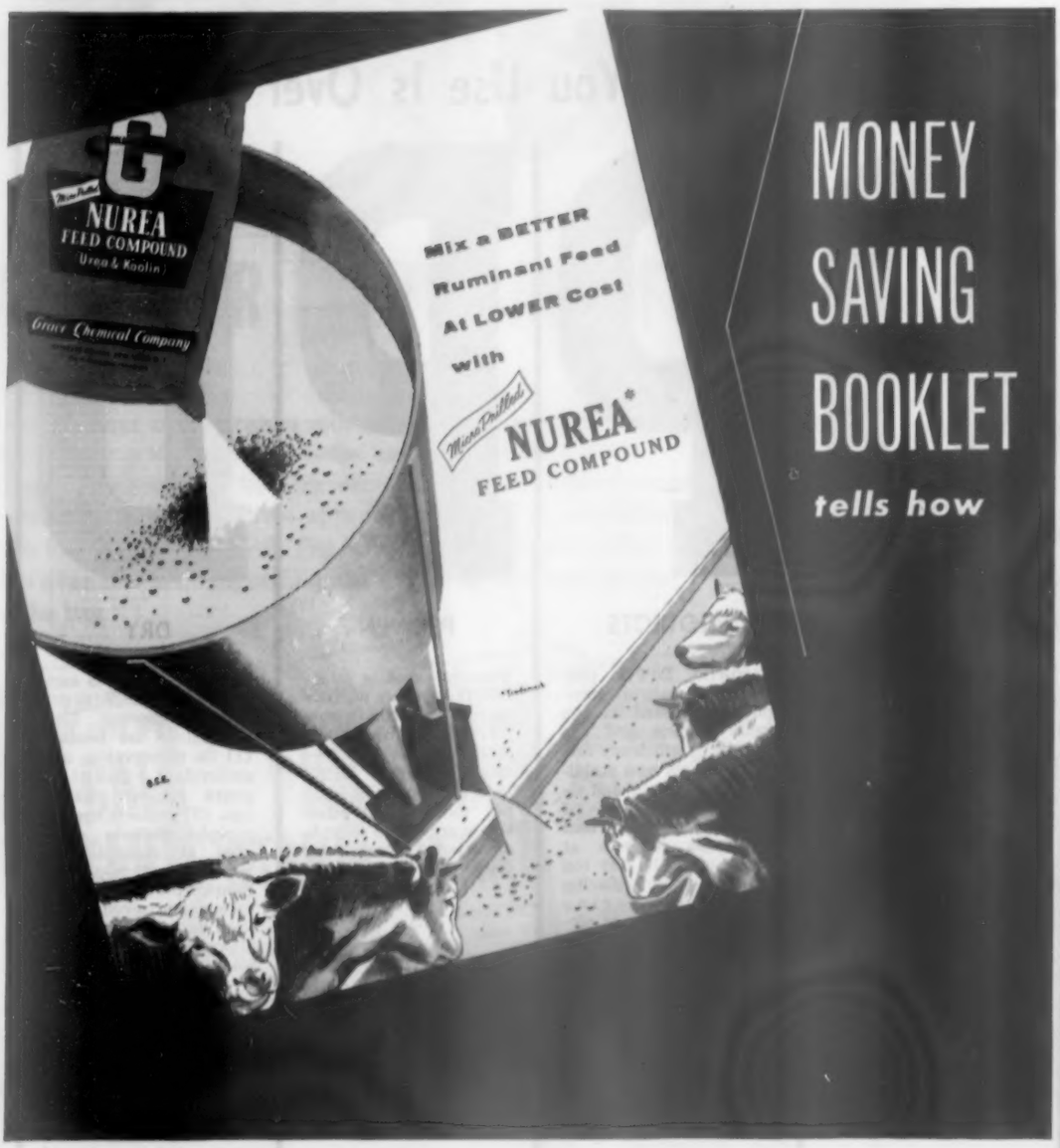
Two experiments have recently been conducted at Cornell to compare in one case 14, 16, and 18% protein and in the other 14, 15, and 16%, for White Leghorns on a high energy (approximately 940 calories per pound) ration over an 11-month laying period. Both experiments showed the 14% level to be sufficient for maximum production; 16% and 15% in the respective experiments were adequate.

It seems reasonable to expect that the protein requirement would be higher in a high energy, high efficiency ration than in one of a lower energy value. However, nutritional interrelationships which would tend to minimize the protein level should not be overlooked, such as the sparing effect of a high carbohydrate level on the protein requirement, and the effect of other nutrients on efficiency of protein use. Evidence in this direction was reported by Berg and coworkers who found that layer rations deficient in protein were improved by the addition of vitamin B_{12}.

From presently available evidence, there appears to be no reason to increase appreciably the estimate of 15% for the protein requirement for egg production with energy levels up to 940 calories per pound and under conditions of moderate environment. When higher energy levels are used

(Continued on page 34)

CHECKERBOARD ELEVATOR CO.
Buyers and Sellers
of
MILLFEEDS, GRAINS AND GRAIN PRODUCTS
KANSAS CITY ST. LOUIS MINNEAPOLIS



This new booklet on MicroPrilled NUREA* — a low-cost source of protein for ruminants — tells you how to mix a better balanced feed, with increased efficiency, *at lower cost to you.*

It tells how to calculate how much MicroPrilled NUREA to use in representative formulations for ruminants.

It gives tips on handling and storage of MicroPrilled NUREA.
Write today for your free copy. *Trademark

GRACE CHEMICAL COMPANY
HANOVER SQUARE, NEW YORK, N. Y. • ATLANTA, GA. • CHICAGO, ILL. • MEMPHIS, TENN.

PK
now
multiwall
bags
too!
PERCY KENT BAG COMPANY, INC.
KANSAS CITY • BUFFALO • NEW YORK

KAFIR & MILO
Largest Dealers
in Southwest
MID-CONTINENT GRAIN CO.
Kansas City, Mo.

SCROGGINS GRAIN CO.
Phone: ER 3913 — Teletype: MP 344
WHOLE and GROUND GRAINS
and SCREENINGS
MINNEAPOLIS, MINNESOTA

For improved, economical milk and beef production

New and Better

CITRUS PULP

with **PELLETS**

Proven as an economical diet mainstay for improving both milk production and beef growth and skeletal formation, GOLDEN ISLE and HEADLINER CITRUS PULP have now been pelletized to provide even greater feeding advantages.

The fine material is screened out of GOLDEN ISLE and HEADLINER CITRUS PULP and pressed into 3/16" pellets, which are then added back to the citrus pulp before bagging. In addition to its easy digestibility, high carbohydrate concentration, palatability, high TDN (over 74%) and other unusually desirable properties, citrus pulp with pellets also provides:

1. *A much cleaner feed*
2. *A more palatable feed*
3. *Less waste to the farmer*
4. *Less residue remaining in the feeding trough*
5. *Less fines to get up the nostrils of cattle*

The reduced bulk offers the same weight in a smaller bag, requires less storage space, is easier to handle and permits more bags to the load.

ALL THESE ADVANTAGES ARE OFFERED AT NO INCREASE IN PRICE over the old style citrus pulp. Available 12 months in the year from laboratory-controlled production through BRADLEY & BAKER, leaders in the sale of dried citrus pulp.

GUARANTEED ANALYSIS	
PROTEIN	Not less than 6.00%
FAT	Not less than 2.50%
FIBER	Not more than 15.00%
CALCIUM (Ca)	Not more than 3.00%

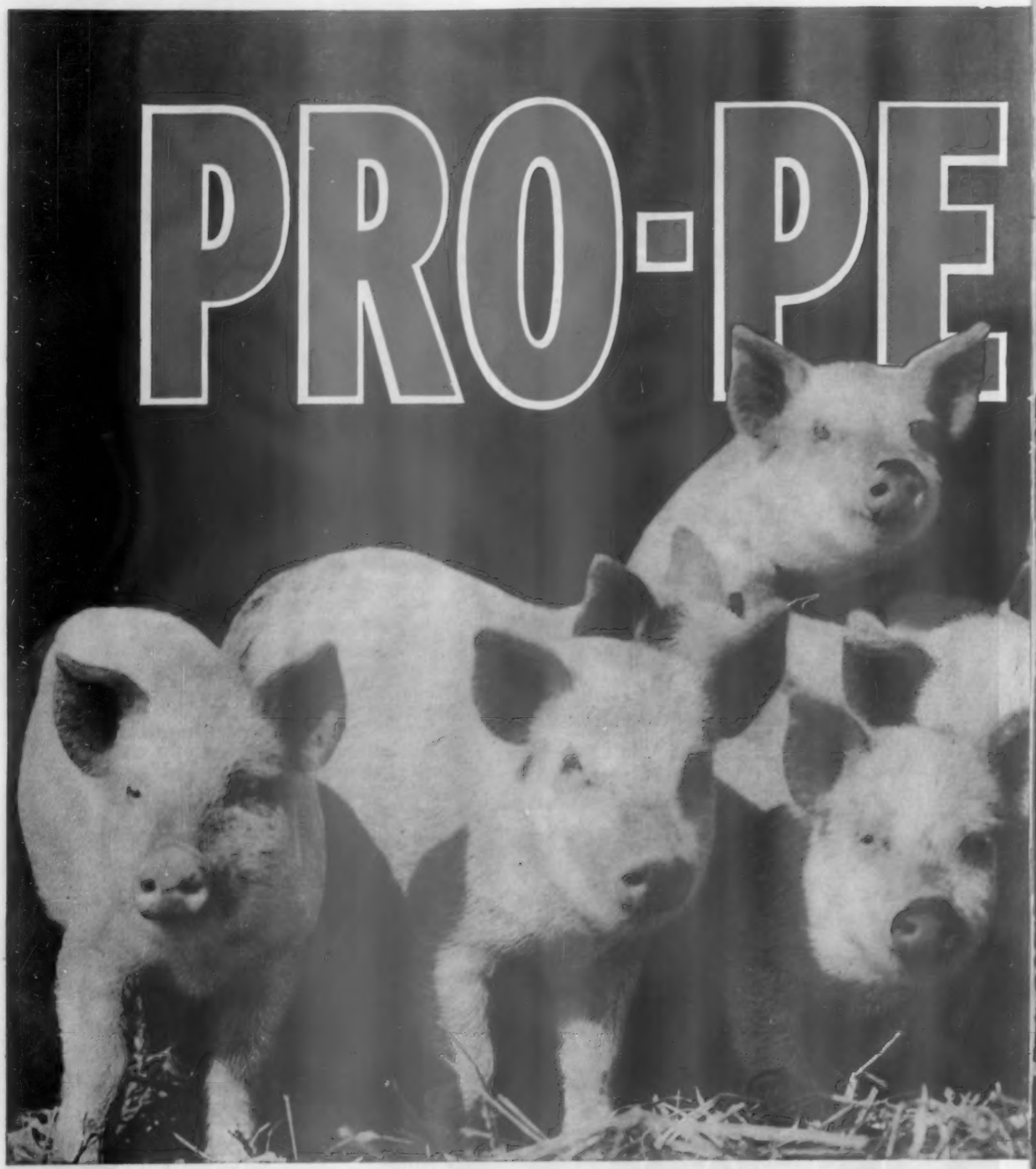
BE THE FIRST TO OFFER YOUR TRADE CITRUS PULP WITH PELLETS

BRADLEY & BAKER

155 EAST 44th STREET • NEW YORK 17, N. Y.

DISTRICT SALES OFFICES:
BALTIMORE, MD. - HOUSTON, TEX. - JACKSONVILLE, FLA. - ST. LOUIS, MO.

REPRESENTING: MINUTE MAID CORP.
LIBBY McNEILL & LIBBY



The Economical Antibiotic

Published reports show that PRO-PEN promotes superior growth in swine at less cost than other antibiotics. You get other benefits, too, when you specify PRO-PEN:

1. Antibiotic activity is stabilized against deterioration under high temperatures and high humidities.
2. The carrier ensures accurate and uniform mixing.
3. Variety of forms, with and without vitamin B_{12}, to suit a variety of feed formulas.

Merck is a basic producer of penicillin and was the first company to offer a penicillin feed supplement.

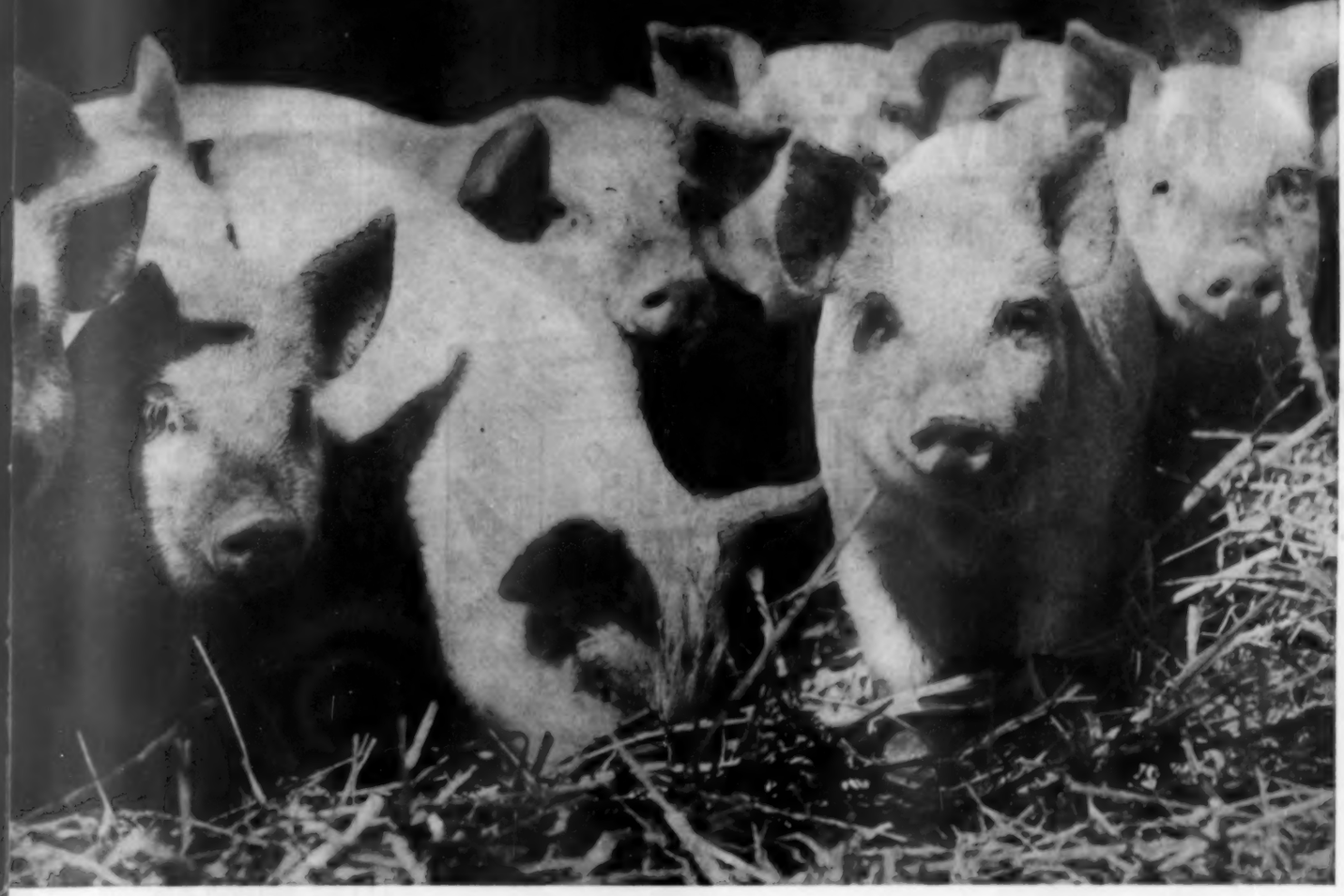
© Merck & Co., Inc.

N®

PRO-PEN
"4"
Each pound contains 4 grams of procaine penicillin in oyster-shell meal.

PRO-PEN
with B_{12}
"2:3"
Each pound contains 2 grams of procaine penicillin and 3 milligrams of vitamin B_{12} activity in oyster-shell meal carrier.

PRO-PEN
"50%"
Each pound contains 227 grams of procaine penicillin in a carrier of oyster-shell meal.



Feed Supplement for Swine

Merck's basic know-how in the manufacture of micro-ingredients and the preparation of pre-mixes is part of its comprehensive service to the feed industry.

Send for complimentary copy of *Procaine Penicillin Antibiotic Feed Supplement*, a comprehensive digest of swine feeding experiments with procaine penicillin.

Research and Production for Better Poultry and Animal Nutrition

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

through the addition of fat, it seems logical in the absence of specific evidence to consider that the protein requirement would increase in proportion to the increase in efficiency.

Vitamins

Vitamin B_{12}: Evaluating the vitamin B_{12} requirement of hens has been complicated by the tenacity with which reserves of this factor are held within the body, and by the synthesis of vitamin B_{12} by microorganisms in litter. In consequence, the estimation of vitamin B_{12} requirement must be done under conditions which prevent coprophagy and over a period of time sufficient to deplete initial vitamin B_{12} reserves. Such conditions have been used by Milligan and co-workers who found in three experiments that the requirement was not less than 1 microgram per pound nor more than 1.8, when the vitamin B_{12} was supplied in the form of an adsorbate. Subsequent to this work, this supplement has been shown to have a vitamin B_{12} activity somewhat less than its stated potency, so the estimates of Milligan and co-workers may be somewhat high.

Petersen and co-workers found that the requirement for normal hatchability following a period of depletion on the vitamin B_{12}-deficient ration was approximately 2 micrograms of vitamin B_{12} per pound. Under these same conditions the requirement for egg production was 0.5 microgram per pound. These estimates include a requirement for overcoming depletion, and therefore are a high estimate of the basic requirement. Mariakulandai and McGinnis and Chin showed that the requirement for hatchability approximated 0.5 microgram of vitamin B_{12} per pound under conditions which did not involve a preliminary depletion period. Johnson reported a requirement of 1 microgram of vitamin B_{12} per pound.

The requirement for satisfactory reproduction should provide sufficient carryover to the progeny. It is possible by feeding a sufficiently high maternal level of this to eliminate completely the dietary vitamin B_{12} requirement of the chick on a ration of normal protein content. However, such a level could hardly be considered the "requirement" of the hen. More logically, the requirement for reproduction is the minimum level which supports a high rate of reproductive efficiency and provides sufficient carryover to prevent early mortality or growth retardation of chicks fed an adequate diet. A level of 2 micrograms per pound, the tentative requirement estimated by the National Research Council's subcommittee on poultry nutrition, appears to be ample.

Riboflavin: Early estimates of riboflavin requirement of breeders and lay hens, upon which previous recommendations of the National Research Council have been based, were complicated by access of the hens to litter which can serve as a source of extra-dietary riboflavin. More recently Petersen and co-workers found that the minimum requirement for reproduction was approximately 1.7 milligrams per pound for Leghorn hens maintained in laying cages.

A similar experiment using larger numbers of hens over a longer period of time was recently completed at Cornell. In this experiment six levels of riboflavin ranging from 0.75 to 3.0 milligrams per pound were fed to duplicate pens of White Leghorn pullets on wire floors over a period of 36 weeks. The minimum riboflavin level which consistently supported maximum hatchability throughout the experiment was 1.7 milligrams per pound. Egg production was depressed in the basal lots after the first month of the experiment; the minimum requirement for this function was 1.0 milligram per pound.

These estimates of requirement, which corroborate those published in the most recent revision of the Nutrient Requirements for Poultry by the National Research Council, can be applied directly to rations for caged layers. Even though hens maintained in floor pens can derive a part of their riboflavin requirement from litter, it is nutritionally more sound to make adequate provision for the entire requirement in the ration. Variations in the synthetic activity of litter microorganisms, and differences in the rate of coprophagy of individual hens or flocks, make dependence on this source of riboflavin unwise.

Vitamin A: Heywang has recently studied the effect of high temperature on the requirements of laying and breeding hens for vitamin A. Using a practical diet and a "stabilized" vitamin A product, he found that approximately 2500 units of vitamin A per pound were sufficient for egg production in moderate temperatures, whereas the requirement rose to approximately 3700 units per pound in extremely hot weather. The effect of temperature evidently was not on the vitamin A requirement as such, but rather indirectly through depressing feed consumption. The requirement for reproduction was met

Pittsburgh Plate Glass Co.
36% LINSEED MEAL
MEAL SALES — 424 Flour Exchange Bldg., Minneapolis 15
Telephone LIncoln 8469
PLANT AT RED WING, MINNESOTA

NEW 10 pound Handi-Pak for baby chicks

Boosts early sales–builds extra profits

Display these new Handi-Paks now . . . for earlier sales and extra business throughout the chick season. Old customers like the convenience of this new 10-lb., self-feeding carton for baby chicks. New customers are attracted by its "chick size" economy — which leads to big package repeat business later.

Peebles' keeps flock owners coming back for more, because Peebles' makes a difference they can see. It gives extra "milk-fed" benefits at low cost. Tones digestive systems for better health. Saves extra chicks. Keeps appetites sharp, even during medication. Supplies the important Whey Factor for added grow power and early feathering.

Order your supply of Peebles' now. Get both the new Handi-Paks and regular 50-lb. cartons. Sell Peebles' to supplement your regular feeds the year around for better results and extra profits. *Aggressively advertised and merchandised, coast to coast.*

Peebles'
FREE CHOICE FEED
Write Appleton, Wis., for name of your nearest distributor.

WESTERN CONDENSING COMPANY Appleton, Wis. • Petaluma, Calif.
World's Largest Producer of Whey Products

AN INVITATION FROM
LIME CREST
You are cordially invited to visit the Lime Crest Research Laboratory and the Company's Plant.
Your time with us should prove interesting and instructive, as it has for visitors from many states and several foreign countries.
Write or call . . .
LIMESTONE PRODUCTS CORPORATION OF AMERICA
Newton, N. J. Dept. A-1 Phone 256

SILMO
for Vitamin Oils . . . . for Dry Vitamin Supplements
SILMO CHEMICAL CORP., Vineland, N.J.

Bags BURLAP and COTTON PAPER PLAIN OR PRINTED
TRUCK COVERS TWINES
MAX KATZ BAG CO.
INDIANAPOLIS, IND.

by levels lower than those necessary for maximum egg production.

This research illustrates one reason why the margins of safety necessary in addition to the basic nutrient requirements in formulating practical rations will not be uniform for all locations and seasons. Recognizing that high temperatures increase requirement for vitamin A, rations manufactured for these conditions should make appropriate allowance for this factor; on the other hand, it would appear uneconomical to make as large a provision for a margin of safety in rations to be used in more moderate conditions.

Vitamin E: Singsen and co-workers have reported extensive studies of the relationship of vitamin E content of the ration on egg production and reproduction. Even using rations formulated to be low in vitamin E and containing a highly unsaturated fat as a stress factor to increase vitamin E requirement, egg production was shown to be unaffected by vitamin E nutrition. Hatchability and fertility were lowered by vitamin E deficiency, and the susceptibility of chicks to vitamin E deficiency under conditions of stress was related to the nutrition of the breeding hens. This study also showed an interrelation between vitamin E and one or more B-complex vitamins with respect both to hatchability and the resistance of progeny to deficiency.

Unidentified factors: At least one unidentified factor is required for normal reproduction in hens maintained on simplified rations under conditions preventing coprophagy. There appears to be general agreement among laboratories active in this field that at least three unidentified factors are required by the chick for normal growth. Which of these factors are needed by breeding hens, or whether all three are important in reproduction cannot be stated at the present time.

Couch et al. showed that hens require a factor in liver for production and reproduction on a purified diet; Arscott and Combs showed that a factor in fish solubles is needed for normal reproduction; Jacobs and coworkers have implicated alfalfa meal as a source of a nutrient needed by breeding hens; Stephenson and coworkers have shown that forage juice can serve as a source of an unidentified factor needed for normal reproduction in White Wyandotte hens. Waibel et al. at Cornell have shown that the reserves of chicks can be lowered by feeding hens simplified rations not containing sources of unidentified factors, and that such chicks are particularly useful for basic research on unidentified vitamins.

There has been no evidence that any of these unidentified factors are required in simplified rations composed of practical ingredients for normal egg production. It would appear therefore, that specific provision for them need be made only in rations for breeding hens, and that the best guide for adequate supplementation of breeder rations is to use ingredients of demonstrated value for chicks.

Minerals

Studies by Gillis and co-workers on the phosphorus requirement of layers showed that phytin phosphorus was relatively poorly utilized in comparison to inorganic phosphorus supplied from dicalcium phosphate or defluorinated phosphate. The hen appears to be better able than the chick to use phosphorus from phytin. For the hen, phytin phosphorus is approximately 50% "available" in comparison to the phosphorus of inorganic supplements. Approximately 0.5% of available phosphorus, calculated on this basis, meets the requirement for egg production and shell strength.

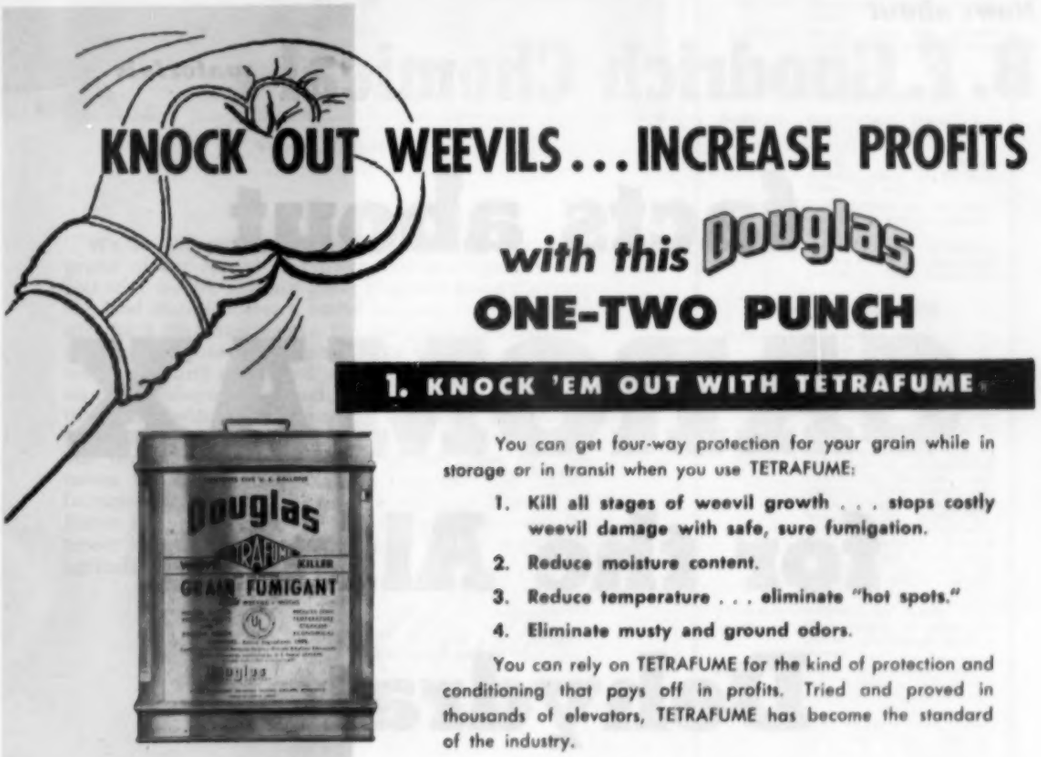
The phosphorus requirement for hatchability was reported by O'Rourke and co-workers to be approximately 0.3%.

Burns and associates have reported that the salt requirement of breeding hens is approximately 0.2% of the ration, and that sodium is the limiting deficiency. A deficiency was observed to lower egg production and body weight, but even a very low level of salt in the ration did not interfere with hatchability. Liberal amounts of salt, in comparison to this estimate of requirement, are customarily supplied in rations for breeding hens. Whether a level as low as 0.2% will meet the requirement under the conditions of mineral balance existing in practical rations will require further investigation.

Berg and co-workers have studied the influence of periodically increasing the level of calcium and vitamin D during the course of the laying year in an effort to overcome the seasonal decline in egg shell quality. Such alterations of the ration had no effect on rate of production, egg weight or shell quality.

Of the individual fields of research

We have . . .
Ray Ewing
PERFORMANCE
PRE-MIXES
Distributed in Washington, Oregon, Montana, No. Idaho and British Columbia by:
LEO COOK CO.
Feedstuffs
95 Connecticut St. Seattle, Wash. MAin 0737
410 Lewis Bldg. Portland 4, Ore. CApitol 1913


KNOCK OUT WEEVILS . . . INCREASE PROFITS
with this Douglas
ONE-TWO PUNCH
1. KNOCK 'EM OUT WITH TETRAFUME
Douglas
TRAFUME
GRAIN FUMIGANT
You can get four-way protection for your grain while in storage or in transit when you use TETRAFUME:
1. Kill all stages of weevil growth . . . stops costly weevil damage with safe, sure fumigation.
2. Reduce moisture content.
3. Reduce temperature . . . eliminate "hot spots."
4. Eliminate musty and ground odors.
You can rely on TETRAFUME for the kind of protection and conditioning that pays off in profits. Tried and proved in thousands of elevators, TETRAFUME has become the standard of the industry.
2. KEEP 'EM OUT WITH SPECIAL MILL SPRAY
Douglas SPECIAL MILL SPRAY has been carefully formulated to give you:
1. The best in a surface and space spray.
2. Killing power that lasts for weeks instead of days.
3. A residual coating that kills bugs on contact.
4. Double duty protection . . . prepares storage facilities before fumigation . . . protects stored grain from migratory insects.
5. Does not affect milling and eating qualities.
Ready to use Douglas SPECIAL MILL SPRAY is easy to apply and is completely harmless to humans. Use Douglas SPECIAL MILL SPRAY to assure clean storage bins and spray directly on surface of grain to keep weevils out.
Douglas
SPECIAL MILL SPRAY
INSECT KILLER
Operators Get this
Guide Book to Greater Grain Profits
. . . Absolutely FREE.
Here's a book every operator will want to read and keep. It's packed full of valuable information on "How to Handle Grain for More Profits." Drop a card in the mail today and get your FREE copy without obligation!
Douglas
CHEMICAL COMPANY

Brew-molass
BREWERS' GRAINS and MOLASSES
THE NEW CENTURY CO.
3939 S. Union Ave.
Chicago 9, Ill.
PHONE: Yards 7-1003

JOIN SUCCESSFUL DEALERS!
SELL Nutrena FEEDS

CONSULTANTS TO THE FEED INDUSTRY
C. W. SIEVERT and ASSOCIATES
Room 1338
221 N. LaSalle St. Chicago 1, Ill.

on the nutrition of laying and breeding hens, the most active during the past several years has been investigation of the effect of antibiotics on egg production and hatchability. The preponderance of experimental evidence shows that they do not stimulate egg production, productive efficiency or hatchability when added to practical rations complete in all recognized nutritive requirements (Berg et al., Petersen et al., Lillie and Bird, Sunde et al, Brown et al., Bently and Hirschberger, Johnson). However, that conditions exist under which a dietary antibiotic supplement will stimulate egg production and/or hatchability has been shown by Carlson (with low production strains of layers), Elam et al (with relatively low producing hens in individual cages), Balloun (under unidentified conditions causing low production), Heywang (under stress of hot weather), and others.

In the presence of a vitamin B_{12} deficiency a dietary antibiotic may increase hatchability (Mariakulandi et al.) but with an adequate ration such an effect is ordinarily not obtained.

Waibel and co-workers have shown that penicillin in the ration of caged layers increased the amounts of biotin and folic acid in the eggs, without affecting egg production or hatchability. The increased egg levels of these vitamins indicated either more effective utilization of the dietary supply or increased synthesis in the intestinal tract, resulting in greater absorption and egg deposition. If the ration had been deficient in one of them, it is logical to expect that production or hatchability would have been benefited by the antibiotic.

The experimental data from studies in which antibiotics have been beneficial can in most cases, be explained as well on a nutritional basis, through the action of the antibiotic in sparing a marginal nutrient, as in any other way. The data of Lillie and Sizemore comparing low-producing with high-producing hens segregated from a flock fed a vitamin B_{12}-deficient ration bear on this point. They showed that low-producers increased production when the ration was supplemented with a vitamin B_{12} plus antibiotic supplement, in contrast to lack of response from the high-producing hens. If the low producing hens were low-producers because of a high requirement for a factor supplied in only marginal amounts by the ration, the antibiotic (and/or the vitamin B_{12}) could have stimulated production by sparing the requirement for this factor.

Other cases of beneficial effect from antibiotics, particularly those obtained under conditions of stress, may be due to their frequently observed effect in stimulating total feed consumption.

The conditions under which antibiotics have produced beneficial response in laying hens appear to be exceptional rather than usual. It is not surprising to find that response of adult chickens to antibiotics varies with environment and ration; there is ample evidence to show that the response of the young chick likewise is governed by these factors. However, the concepts developed from chick studies cannot be applied directly to hens to justify the general use of antibiotics in layer and breeder rations, and the available evidence from hen experiments hardly constitutes an adequate basis for such a practice. The fact that beneficial effects have been observed should stimulate further study to determine the conditions under which antibiotics can be useful in the nutrition of layers and breeders and the mechanisms by which they act.

Oil Chemists' Society Will Meet April 17-20

NEW ORLEANS—The 46th annual meeting of the American Oil Chemists Society will be held April 17-20 at the Roosevelt Hotel in New Orleans.

The program committee is planning papers of wide interest for the technical sessions. There will be a number of social events for both men and women. General convention chairman is Ralph M. Persell.

Requests for hotel reservations should be sent directly to the Roosevelt Hotel, New Orleans, La.

GRAINS — FEED INGREDIENTS
H.V. NOOTBAAR & CO.
Pasadena 2—890 So. Arroyo Parkway—RYan 18491
San Francisco 4—465 California St.—YUkon 25022
Action, Experience, Integrity, Knowledge

News about
B. F. Goodrich Chemical *materials*
facts about
CAROMAX
(Reg. U. S. Pat. Off.)
for the Alfalfa Dehydrator

CAROMAX, an established and effective preservative for carotene in dehydrated alfalfa, was the *first* antioxidant approved for this important use. Caromax stabilizes and reduces deterioration of carotene in alfalfa meal in storage. It has been used with marked success on a commercial basis for the past six years.

Caromax is readily available and competitively priced. For information or samples, please write Dept. AE-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Good-rite
B. F. Goodrich Chemical Company
A Division of The B. F. Goodrich Company

MORE PIG RAISERS NOW FEEDING
Blatchford's
NEW PIG-PAB Pellets
Extra Sales for You with This Profitable, Fast Selling Pre-Starter Milk Supplement
YOUR CUSTOMERS GET . . .
- 40-50 lb. pigs in 8 weeks
- Easier transition to dry feeds
- Maximum antibiotics and vitamins
- Lower fiber content
- Pigs weon quicker

Ask Your Distributor For Pig-Pab!
Blatchford's
Main Plant & Offices: WAUKEGAN, ILL. Midwest Division: Des Moines, Ia. West Coast Division: Nampa, Idaho

FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

ADA Officials, Research Unit Plan Meetings

COLORADO SPRINGS, COLO.—The sales promotion and advertising program of the American Dehydrators Assn. will be one of the principal topics of discussion at the meeting of the board of directors of the organization preceding the convention, Jan. 26-29. The directors will meet at Broadmoor Hotel on Jan. 26 at 9:30 a.m. During the past year, ADA engaged in its first large-scale advertising program and the directors will assess the results of the project and make plans for the future.

The alfalfa research program is another prime topic on the directors' agenda. This activity has been an important phase of the ADA for several years and has resulted in the development of much nutrition information valuable to the dehydrator in marketing his products to feed buyers.

The possible revision of the dues structure of the association will be a third major topic of the directors' meeting.

Presiding at the directors' session will be Vernon C. Britton, association head, who is president of the V. C. Britton Co., Firebaugh, Cal. Joseph Chrisman, executive vice president of the association, will report on the activities of the ADA office.

Current directors of the association are:

R. E. Bert, Bert & Wetta, Maize, Kansas; John A. Caple, A. B. Caple Co., Toledo, Ohio; J. D. Cole, Cole Grain Co., Muskogee, Okla.; W. A. Donnelly, National Alfalfa Dehydrating & Milling Co., Lawrence, Kansas; Loyd M. Faris, The W. J. Small Co., division of the Archer-Daniels-Midland Co., Kansas City; J. W. Fielder, Dixon (Cal.) Dryer Co.; Clifford Green, Green Products Co., Conrad, Iowa; C. E. Hurst, Evergreen Farms, Inc., Raymondville, Texas; Kenneth Jones, Northern Drying Co., Olivia, Minn.; Thomas J. Mateer, Consolidated Blenders, Inc., Fremont, Neb.; Kenneth Morrison, Morrison & Quirk, Hastings, Neb.; Floyd McKennon, McKennon's, Snohomish, Wash.; J. D. Pharo, Keystone Dehydrating Co., Nazareth, Pa., and C. W. Scheurer, Grayson Alfalfa Dehydrating Mills, Sherman, Texas.

While the ADA directors are meeting the Research Council of the organization also will be in session at the Broadmoor. Consideration of new projects and evaluation of work now in progress will be the subjects of the council meeting which begins at 9:30 a.m.

Chairman of the 13-man research group is Dr. L. E. Card, head of the department of animal science, University of Illinois, Urbana.

Other members of the council are Dr. H. J. Almquist, vice president and director of research, The Grange

(Continued on page 36a)

Vernon C. Britton

We in the alfalfa dehydrating industry are quite proud of our record of growth and development. We feel that we are making great progress toward giving the feed manufacturer a better ingredient in more usable form than ever before. On the pages that follow is a record of these achievements in the past year and we particularly commend to your reading the reports on the development of facilities for carotene preservation and methods of improving handling properties, as well as the up-to-date nutritional information on our products. We are mindful of the close ties between the dehydrating industry and the feed manufacturing industry and we are striving always to foster this close bond of friendship and mutual interest in developing a bigger and better American agriculture.

Vernon C. Britton

President,
American Dehydrators Assn.

ADA CONVENTION HEADQUARTERS—Scene of the 1955 convention of the American Dehydrators Assn. is the Broadmoor Hotel, Colorado Springs, Colo. An aerial view of the hotel and some of its facilities are shown in the above photo.

DEHYDRATORS' PROGRAM HIGHLIGHTS

Wednesday, Jan. 26

9:00 a.m.	Board of directors meeting.
9:00 a.m.	Research Council meeting.
12 noon	Joint luncheon, board and council, Green Room.
2:00 p.m.	Board and council reconvene.
4:30 p.m.	Social hour for board, council and their ladies, Green Room.

Thursday, Jan. 27

10:00 a.m.	Dehydrators' bowling tournament, Sport Bowl, downtown.
10:00 a.m.	Start of tour to dehydrating plant at Devine, Colo. (50 miles).
10:00 a.m.	Golf playing—no set tournament (weather permitting).
6:30 p.m.	Social hour, ballroom. Courtesy of associate members. Entertainment.

Friday, Jan. 28

9:30 a.m.	Convention called to order in hotel Theater; V. C. Britton, president, presiding. Invocation. Mr. Britton's report. Financial report, J. W. Fielder. Election of new directors. "The Marketing of Dehydrated Alfalfa," by Dr. Leonard Schruben, professor of agricultural economics, Kansas State College. "Dehydrated Alfalfa in Ruminant Nutrition," by Dr. Wise Burroughs, professor of animal husbandry, Iowa State College. Trade rules committee report, by Thomas J. Mateer, chairman.
11:30 a.m.	Adjourn for lunch.
11:40 a.m.	New board of directors meets, Children's Dining Room.
12:30 p.m.	New president's luncheon. Speaker, Everett Conover, "This Way Up."
2:00 p.m.	Convention reassembles. "Alfalfa Seed Treatment for Better Stands" by Dr. L. L. Stirland, E. I. du Pont de Nemours & Co., illustrated. "Plant and Soil Treatment With Insecticides for Greater Yields" by Ross Allmon, Hercules Powder Co., movie illustrated. Adjournment.
3:15 p.m.	Board of directors meets, Children's Dining Room.

Saturday, Jan. 29

9:30 a.m.	Convention assembles, R. E. Bert, presiding. Advertising committee report by W. A. Donnelly, chairman. Advertising & promotion program as it was carried out in 1954, by Joseph Chrisman, executive vice president. "Why Advertise Your Product" (speaker to be chosen). Dues committee report.
12 noon	Adjourn for lunch.
1:30 p.m.	"Dehydrated Alfalfa and Antioxidants," Dr. Harold Olcott, head, field crop utilization section, Western Utilization Research Branch, U.S. Department of Agriculture. "Dehydrated Alfalfa—its Virtues and Its Vices" by Dr. H. S. Wilgus, vice president and director of research, Peter Hand Foundation. Open forum with experts.
6:30 p.m.	Banquet and dinner dance. Entertainment. Ballroom.

SPECIAL ALFALFA SECTION

Pricing Dehydrated Alfalfa

By Leonard W. Schruben and William E. Cathcart
Kansas State College

Dr. Leonard W. Schruben

EDITOR'S NOTE: The American Dehydrators Assn. two years ago provided funds for a study of marketing practices in the dehydrated alfalfa industry. This project has been under the direction of Dr. Leonard W. Schruben, professor of agricultural economics, at Kansas State College. Last year, at the annual meeting of the association, Dr. Schruben presented some preliminary information on this subject in a program talk. The following article is a condensed report of the findings in his studies of this field during the past year. A more extended report will be issued later.

v v

What price shall I quote on the next car of dehydrated alfalfa? If too high I will miss a sale! If too low, I will have missed getting a return that the buyer would have been willing to pay!

Perhaps no more intriguing questions confront the sales office than the ones on pricing. Too high an asking price will put you out of the market; too low, bankruptcy.

We would be the last to claim that you'll find the final answer to pricing in this or any other marketing study. However, if you buy or sell dehydrated alfalfa we do think you will be interested in the following summary. It isn't complete. A more complete report is to be issued later.

We asked nutrition experts questions about prices and use of dehydrated alfalfa and the answers are presented in this article. We wish to point out that the answers do not necessarily reflect the viewpoint of the feed manufacturing industry. The questionnaires were sent to a select group of highly trained specialists, primarily to develop a method of analysis that later could be used with a representative group of feed manufacturers.

A Survey

Despite the problems of mailing and answering questions, it is about the most practical method of getting answers to general questions such as were asked on this survey. The answers in tabulated form give the appearance of being complicated, but actually they are quite easy to read.

A mail survey was conducted by the Kansas agricultural experiment station on the use of dehydrated alfalfa with funds provided by the American Dehydrators Assn. The purpose of the survey was to determine opinions as to the relative essentiality of dehydrated alfalfa in different feeds.

Two questionnaires were sent to members of the nutrition council of the American Feed Manufacturers Assn. The first questionnaire was sent to all 63 active members of this group. An answer was received from each member. Answers from three indicated that they were not associated with firms that manufacture feeds but only supplied some ingredients. For this reason, these answers were not included in the summary tabulation of the relative value placed on alfalfa.

Relative Importance of Dehydrated Alfalfa

The first questionnaire asked for an indication of the relative importance of dehydrated alfalfa as an ingredient in each of the following kinds of feeds: poultry, dairy, hog, beef cattle, sheep, and special feeds (see tables 1 through 6).

Here is how to use table 1. First, the table is divided into two parts; (a) number of answers, and (b) percent of answers. They report the same answers, but one is on a number basis and the other is on a percent basis.

For example, suppose you were interested in how the men who answered the questionnaire rated dehydrated alfalfa in chick starters. First look under number of answers and take chick starter and read across the table. You will find a 44. This means that 44 of the 60 indicated dehydrated alfalfa was very essential. On the same line, 15 rated it as desirable but not essential and one never used it. This makes a total of 60 answers.

A look at chick starter under the percent of answers reveals that 73% indicated it very essential, 25% as desirable but not essential, and 2% never used dehydrated alfalfa. Other tables reporting other feeds may be read in the same manner.

The highest number of "very essential" ratings was given for turkey starter (49 out of 60). By contrast only one indicated alfalfa to be very essential in fattening rations for beef cattle. The results indicate that dehydrated alfalfa was held to be very essential in most poultry and hog rations.

Sixty-four percent of a possible 540 ratings indicated dehydrated alfalfa to be very essential in poultry feeds. Correspondingly, 52% of a possible 300 rated it as very essential in hog feeds. Only 6% indicated that it was very essential in beef cattle feeds and 8% in sheep feeds.

Substitutes for Dehydrated Alfalfa

A total of 53 out of the 60 indicated dehydrated alfalfa was very essential in at least one of their poultry feeds. On a second questionnaire these men were asked the question, "You have indicated that dehydrated alfalfa was very essential in some poultry feed. What would you use to replace the dehydrated alfalfa in poultry feed if the price became very high?" Forty-seven answers were received, two preferring not to answer the question, three did not return the questionnaire, and one firm had sold its mill.

Out of 47 answers nearly all indicated the necessity of adding some of the vitamins. Vitamin A was indicated the most times, followed by K and the B complex vitamins with E being mentioned a few times.

(Continued on page 9a)

Table 1—Relative Essentiality of Dehydrated Alfalfa in Poultry Feeds

	Very essential	Desirable but not essential	Used if price is low enough	Never used	Do not manufacture this kind of feed	No answer	Total
Number of answers:							
1. Chick starter	44	15	..	1	..	..	60
2. Chick grower	36	20	3	1	..	..	60
3. Broiler starter	45	14	..	1	..	..	60
4. Broiler finisher	29	23	3	2	2	1	60
5. Laying mash	37	20	2	1	..	..	60
6. Turkey starter	49	10	..	1	..	..	60
7. Turkey grower	35	21	3	1	..	..	60
8. Turkey breeder	47	12	..	1	..	..	60
9. Turkey finisher	22	27	5	1	5	..	60
Total	344	162	16	10	7	1	540
Per cent of answers:							
1. Chick starter	73	25	..	2	..	..	100%
2. Chick grower	60	33	5	2	..	..	100
3. Broiler starter	75	23	..	2	..	..	100
4. Broiler finisher	48	38	5	3	3	2	100
5. Laying mash	62	33	3	2	..	..	100
6. Turkey starter	82	17	..	2	..	..	100
7. Turkey grower	58	35	5	2	..	..	100
8. Turkey breeder	78	20	..	2	..	..	100
9. Turkey finisher	37	45	8	2	8	..	100
Total	64	30	3	2	1	..	100%

Table 2—Relative Essentiality of Dehydrated Alfalfa in Dairy Feeds

	Very essential	Desirable but not essential	Used if price is low enough	Never used	Do not manufacture this kind of feed	No answer	Total
Number of answers:							
1. Calf starter	16	30	5	6	3	..	60
2. Calf feed	13	35	4	5	2	1	60
3. Dairy feed	4	18	13	21	1	3	60
Total	33	83	22	32	6	4	180
Per cent of answers:							
1. Calf starter	27	50	8	10	5	..	100%
2. Calf feed	22	58	7	8	3	2	100
3. Dairy feed	7	30	22	35	2	5	100
Total	18	46	12	18	3	2	100%

Table 3—Relative Essentiality of Dehydrated Alfalfa in Hog Feeds

	Very essential	Desirable but not essential	Used if price is low enough	Never used	Do not manufacture this kind of feed	No answer	Total
Number of answers:							
1. Pig starter	31	19	..	9	8	3	60
2. Pig and sow feed	40	15	..	1	3	1	60
3. Hog concentrate	30	22	1	2	4	1	60
4. Complete hog feed	37	22	3	1	6	1	60
5. Brood sow ration	38	9	..	1	11	1	60
Total	156	87	4	14	32	7	300
Per cent of answers:							
1. Pig starter	36	32	..	15	13	5	100%
2. Pig and sow feed	67	25	..	2	5	2	100
3. Hog concentrate	50	37	2	3	7	2	100
4. Complete hog feed	45	37	5	2	10	2	100
5. Brood sow ration	63	15	..	2	18	2	100
Total	52	29	1	5	11	2	100%

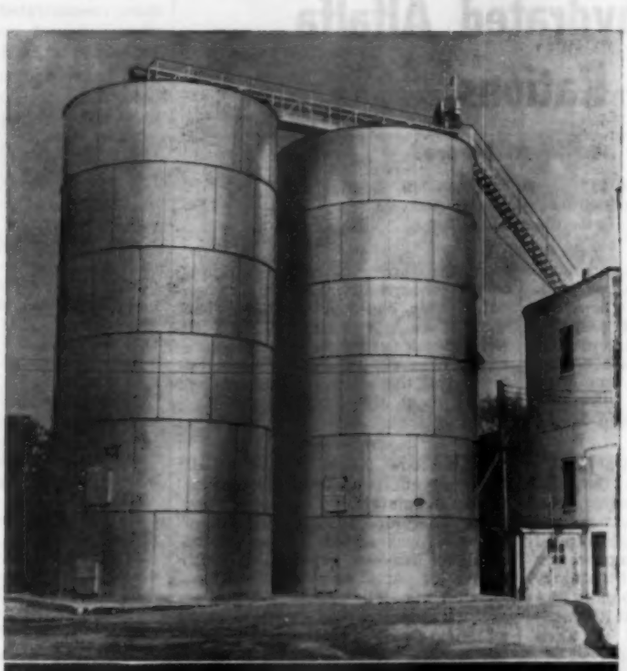
Table 4—Relative Essentiality of Dehydrated Alfalfa in Beef Cattle Feeds

	Very essential	Desirable but not essential	Used if price is low enough	Never used	Do not manufacture this kind of feed	No answer	Total
Number of answers:							
1. Wintering rations	6	26	7	3	17	1	60
2. Fattening rations	1	26	10	7	15	1	60
3. Cow rations	3	21	9	4	20	3	60
Total	10	73	26	14	52	5	180
Per cent of answers:							
1. Wintering rations	10	43	12	5	28	2	100%
2. Fattening rations	3	43	17	12	25	3	100
3. Cow rations	5	35	15	7	33	5	100
Total	6	40	14	8	29	3	100%

Table 5—Relative Essentiality of Dehydrated Alfalfa in Sheep Feeds

	Very essential	Desirable but not essential	Used if price is low enough	Never used	Do not manufacture this kind of feed	No answer	Total
Number of answers:							
1. Lamb fattening	1	16	4	3	34	2	60
2. Pregnant ewes	9	9	3	4	33	2	60
Total	10	25	7	7	67	4	120
Per cent of answers:							
1. Lamb fattening	2	27	7	5	57	2	100%
2. Pregnant ewes	15	15	5	7	55	3	100
Total	8	21	6	6	56	3	100%

ADA OFFICERS — Elected officers of the American Dehydrators Assn. are shown above, left to right; Raymond Bert, Bert & Wetta, Maize, Kansas; Vernon Britton, V. C. Britton Co., Firebaugh, Cal.; and J. D. Cole, Cole Grain Co., Muskogee, Okla.



A typical inert gas dehydrated alfalfa plant located in the midwest. Constructed of air tight steel plate sections it operated inexpensively on a small Gas Atmospheres', Inc. Inert Gas Generator. After three months storage operator reports no measurable loss of carotene content in alfalfa meal.

Never Before Could Such Amounts of Dehydrated Alfalfa Meal be Safely Stored at Such Low Prices.

Leading producers report no measurable loss of carotene content where Gas Atmospheres inert gas equipment is on the job—

Dehydrated alfalfa meal is assuming ever-increasing importance both as an animal food and as an industrial raw material. One reason for this growing popularity is the wealth of essential nutrients contained in appreciable amounts in alfalfa. But a big factor in the extended use of this plant is the improvement in storage methods. *Never before could such amounts of alfalfa meal be safely stored at such low prices.*

The development of the inert gas method of storage to its present degree of efficiency has been the one big factor in improving storage facilities and reducing storage costs.

Alfalfa meal producers know the protensity for deterioration in alfalfa of such a vital ingredient as carotene. It is subject to rapid oxidation and easily destroyed by enzymatic action. Unprotected alfalfa meal will lose from 20 to 30 percent of its vitamin A activity in a week. The prevention of this loss of carotene is of vital importance.

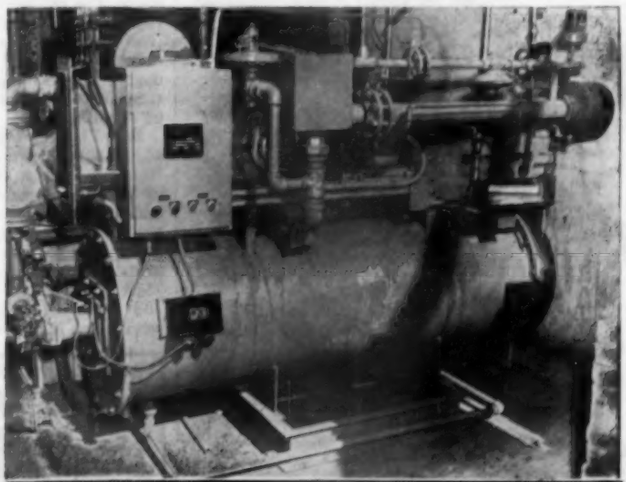
Until inert gas storage was perfected the only method for retarding carotene loss was by storage in expensive refrigerated warehouses where temperatures could be held below freezing. In most instances, the meal had to be packaged in burlap sacks prior to refrigerated storage.

With the advent of modern inert gas storage producers report that not only are carotene losses held to a minimum, but far greater flexibility of operation is experienced.

For example, an inert gas storage facility requires only an air tight silo, of either cement or metal construction, and a small gas generator. It can be quickly and inexpensively erected wherever most advantageous to the producer. It can be added to with equal ease, should production warrant. In some cases it is possible to convert present cement silos into gas tight containers at little cost. Too, a setup of this nature permits bulk storage, effecting substantial savings by eliminating the need for bagging.

Gas Atmospheres, Inc., has been working with leading alfalfa meal producers in an effort to develop the most efficient, most flexible and economical storage facility possible. The largest inert gas generator presently at work in this connection was designed and built by Gas Atmospheres, and has been working "extremely satisfactorily" for the past two years. A report from the last producer to setup inert gas storage facilities is that he is "sold" on this method because his initial carotene check shows no measurable loss, while his storage costs are "running below all expectations."

If the production of alfalfa meal is your business it will pay you to talk with Gas Atmospheres and get the latest facts on modern inert gas storage facilities. We'll be happy to work with you in arranging interviews with producers now using this method, and estimating the costs of such facilities for your particular requirements.



Gas Atmospheres', Inc. Inert Gas Generator that is working at an dehydrated alfalfa meal storage installation in Ohio. Gas Atmospheres builds these efficient generators to meet any capacity requirement.

gas Atmospheres, inc

equipment for producing industrial gases

20011 WEST LAKE ROAD
CLEVELAND • 16 • OHIO

Use of Artificially Dehydrated Alfalfa In Dairy Cattle Rations

By H. D. Eaton, R. E. Johnson and L. A. Moore

Animal Industries Department, Storrs (Conn.) Agricultural Experiment Station, Storrs, Conn., and Nutrition and Physiology Division, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md.

Literature Review

Artificially dehydrated alfalfa has been used experimentally in dairy cattle rations in the following ways:

1. As the main source of roughage.
2. As a supplement to non-leguminous or poor quality roughage.
3. As a replacement for a portion of the grain.
4. As a carotene, provitamin A, source.

1. As the main source of roughage

The early reports (Huffman, 1939 and Monroe et al., 1946) on the feeding of dehydrated forage as the main source of roughage dealt with the feasibility of feeding the dried product, its digestibility and factors in the drying process affecting its feeding value. In general dehydrated alfalfa was found to be a more satisfactory source of roughage for the dairy cow than field-cured and field-baled roughage from the same field. This was especially so when the plant was early cut and properly dried. Some reports of high drying temperature affecting digestibility were made; however, it was later found that this could be alleviated by reducing the time exposed to the heat.

Recent experiments with artificially dehydrated alfalfa as the sole source of roughage for lactating cows and young calves have been conducted at the Storrs (Conn.) Agricultural Experiment Station in cooperation with the Nutrition and Physiology Division of the Dairy Husbandry Research Branch, Agricultural Research Service, U.S. Department of Agriculture.

The first year's experiments 1949-1950, consisted of a comparison of field-cured and field-baled alfalfa hay with artificially-dehydrated alfalfa meal and pellets. All roughages came from the same field and were processed concurrently. The alfalfa when cut was in one-quarter bloom. The second year's experiments, 1951-52, were identical to the first except the alfalfa was cut in initial bloom and instead of the artificially dehydrated alfalfa meal, the chopped form was used.

Cow Phase

In the cow phase (Porter et al., 1953) a preliminary test indicated extreme unpalatability of the ground meal. Therefore 10%, by weight, of molasses was added to the ground meal to increase palatability. Both forms of artificially-dried alfalfa, ground and pelleted, were eaten in greater amounts than the field-cured and field-baled. Greater actual milk production, accompanied by a significant decrease in fat percentage, was found with the feeding of the ground and pelleted forms. When milk production was equated to 4% fat corrected milk, no differences between the three forms were apparent.

In the cow phase for the second year's experiments, the pelleted form of alfalfa was consumed in significantly lesser amounts, accompanied by lower actual milk production and % fat of the milk than was observed for the field-baled or chopped forms. This was a definite reversal of the previous year's findings. The pellets appeared to be made of more finely ground material and much denser. Subsequent objective tests confirmed these observations. Although confounded by different years, these two factors appear to warrant further investigation (Porter et al., 1953).

Calf Phase

In the calf phase of the first year's work, in which Holstein calves were used, the pellets were consumed in greater quantity accompanied by greater increases in weight than the ground or baled forms. Appropriate adjustment of the live weight increases for feed eaten showed no differences between the different types of hay. Therefore, it was assumed that the greater gains observed in those calves fed the pelleted alfalfa were due primarily to increased palatability and/or to the more concentrated form of roughage which allowed greater consumption (Eaton et al., 1951).

In the second year's work in which both Guernsey and Holstein calves were used, the results were essentially as those found the previous year. However, the chopped form of alfalfa was eaten in as great quantities as the pelleted form and resulted in comparable growth (Eaton et al., 1952). It is of interest that Gardner and Akers, 1954, have recently reported that pelleting of field-cured and field-baled alfalfa resulted in marked increases in hay consumption of calves. This confirms the value of pelleting of alfalfa for dairy calves.

In additional experiments with young calves in an attempt to formulate complete rations using artificially-dehydrated alfalfa meal as the source of roughage, Dolge, et al., 1951, found that as the level of alfalfa was increased from 25 to 75%, growth decreased. The 25% level of alfalfa gave greater growth than a standard ration of average quality field-baled and field-cured alfalfa and limited starter, the 50% equivalent growth, and the 75% inferior growth.

Calf Preference

Since considerable dust was experienced in the pelleting process of starters with the high levels of artificially-dehydrated alfalfa meal used in the above experiment, it was decided to test whether calves could preferentially sort mixtures of alfalfa pellets and starter pellets. This would eliminate the necessity of incorporating the two types of ingredients into a single pellet. Eight 7-day old Holstein calves were fed various mixtures of alfalfa pellets and starter pellets to 63 days of age. Four of the calves received initially mixtures containing 10% alfalfa pellets and the other four, mixtures containing 40%. For two of the calves in each group, the percent alfalfa was held constant and for the other two it was increased at a constant rate. Samples of the pellet mixture as fed and as refused by each calf were taken. These samples were analyzed to determine possible preference as demonstrated by the ability to sort one pellet from the other.

Using crude fiber, nitrogen-free extract and ash as criteria for differences between samples fed and samples refused, it was found that only those calves receiving the 40% alfalfa pellet mixture constantly for the entire experimental period exhibited significant ability to select one pellet or the other. Of these calves, one selected the alfalfa pellets and the other the starter pellets. On the average, the change in composition between that fed and refused was relatively small, indicating either the inability of the calf to change to any degree the composition of the mixtures or the lack of preference (Dolge et al., 1952).

Based on the above data, Dolge et al., 1953, fed thirty-six 7-day old male Holstein calves ad libitum mixtures of alfalfa pellets and starter pellets and limited whole milk to 91 days of age. The mixtures of alfalfa pellets and starter pellets fed contained four initial levels of alfalfa 10, 15, 20 and 25%; for each of these initial levels and parts of alfalfa were increased weekly, at the rate of 1.0000, 1.1747,

ALFALFA MEAL AND PELLETS
DEHYDRATED AND SUNCURED
OUR FIRST OBJECTIVE—CUSTOMER SATISFACTION
American Dehydrators Association
The quality of our meal is held to high standards by strict control and modern methods of harvesting, drying, grinding, cooling, warehousing, carloading and laboratory analysis.
EVERY CAR ANALYZED BEFORE SHIPMENT
THE REYHER MILLING CO.
McCLAVE, COLORADO
Phone Wiley, Colorado 541, for Your Needs
In the Heart of the Rich Arkansas Valley

832-3 Board of Trade Building
Kansas City 5, Missouri
Victor 0950-51-52
TWX KC-593
JOHN WARREN
BART THOMAS
WARREN Feed & Grain Co.
Experienced, Efficient Service for Buyers and Sellers of Alfalfa Products
BRANCH OFFICE
Ft. Worth, Texas
P. O. Box 11403
WEbster 7311
TWX FT-8181
C. W. TURNER

WORLD'S FINEST HAMMERMILL
1955 'JAY BEE'

J. B. SEDBERRY, INC.
FRANKLIN, TENN.

When you Improve your Feed with DEHYDRATED ALFALFA

Here's what DEHYDRATED ALFALFA Meal Puts in Your FEED

American Dehydrators Association
PASTURE IN THE BAG
DWIGHT BLDG. KANSAS CITY 5, MO.
Dept. 5C

CAROTENE—100,000 I.U. or more Vitamin A in a pound. More than any other natural nutrient.
PROTEINS 17% or more, with a wide range of essential amino acids.
CARBOHYDRATES 38 to 40% nitrogen-free extract.
MINERALS Calcium, phosphorus, potassium, magnesium, sulphur, trace elements.
VITAMINS A, E, K, plus the B-Complex from nature's richest sources.
PLUS the unidentified growth promoting factors so important for health and livability.

THESE MEMBERS throughout the Nation to Serve You!

ARIZONA
Casa Grande—Borg Mills
Phoenix—Arizona Flour Mills Co.

ARKANSAS
Blytheville—Rich Land Products Co.
Driver—Lowrance Bros. & Co., Inc.
Hughes—Horseshoe Milling Co.

CALIFORNIA
Dixon—Dixon Dryer Company
El Centro—The Fudge Company
Firebaugh—V. C. Britton Company
Los Angeles—Lockhart Ranch
Tracy—San Joaquin Valley Hay Growers Assn.

COLORADO
McClave—The Reyher Milling Co.
Milliken—Colorado Alfalfa Products Co.
Pueblo—American Alfalfa Dryers, Inc.
Sterling—Sterling Alfalfa Products, Inc.
Sterling—Valley Dehydrating Co.
Wiley—Ark. Valley Alf. Mlg. Co., Inc.

ILLINOIS
Auburn—Auburn Dehydrating Mill
Roanoke—Prairie Dehydrating Co.

INDIANA
Fort Wayne—The T. E. White Co., Inc.
New Paris—Dwiggins Alfalfa Mills
Rushville—Rush County Alfalfa Dehydrating Coop., Inc.
Vincennes—Charles H. Schenk & Sons

IOWA
Conrad—Green Products Co.
Grinnell—Lang's Alfalfa Farms
Iowa City—Iowa Valley Milling Co.
Lake Park—Arco Dehydrating Co.
Laurel—Paul Bros.
Sloan—Wraybill Dehydrating Co.

KANSAS
Concordia—Harry M. Liggett Co., Inc.
Independence—Elk Valley Alfalfa Mills
Lawrence—Cerophyl Division, Nat'l Alfalfa Dehy. & Milling Co.
Noria Mill, Inc.
Ramsey Dehydrating Co.
Maize—Bert & Wetta
Manhattan—Eureka Lake Alfalfa Co., Inc.
Neodesha—The W. J. Small Co. Division Archer-Daniels-Midland Co.
Sales Office, Kansas City, Mo.
Oxford—Oxford Dehydrating Co.
Syracuse—Western Dehydrating Co.
Topeka—Kaw Dehydrating Co., Inc.
Koelling-Thompson Dehy. Co.
Progress Products Co.
Winfield—H. E. Clark Company

LOUISIANA
Napoleonville—Sugar Bowl Dehydrating Co., Inc.
Shreveport—Caplis Farm Dehydrating Co.

MICHIGAN
Erie—Erie Alfalfa Mills, Inc.

MINNESOTA
Bird Island—Rural Dehydrators
Crookston—Red River Alfalfa Co.
Olivia—Northern Drying Company
Swift—Landby Dehydrating Co.
Worthington—Worthington Dehydrating Co.

MISSOURI
Carrollton—Carrollton Processing Company
Hannibal—Marion County Milling Co.
St. Louis—Ralston Purina Company
Wakenda—Reimer Dehydrating Plant

NEBRASKA
Columbus—Al-Fa Meal Company
Cozad—Haymaker Feeds Company
Nebraska Farm Products, Inc.
Dakota City—Beerman Bros. Dehy
David City—David City Alfalfa Co.
Fremont—Dehy Alfalfa Mills, Inc.
Glenvil—Glenvil Alfalfa Mill
Gothenburg—Nebraska Feed Products Co.
Grand Island—Cornhusker Farms
Hastings—Morrison & Quirk
Herman—Herman Alfalfa Milling Co.
Kearney—Kearney Alfalfa Mills
Lexington—Central Alfalfa, Inc.
Dawson County Feed Products, Inc.
Nebraska Alfalfa Farms, Inc.
Platte Valley Products, Inc.
Minden—Trico Feed Mills
Oakland—Burt County Mills, Inc.
Dehydrated Products Company
Odessa—Odessa Alfalfa Mills, Inc.
Shofstall Milling Company
Omaha—Barton Mills, Inc.
Schuyler—F. J. Higgins Milling Company
Scottsbluff—Alfamix Company
Scribner—Ebel Alfalfa Company
West Point—West Point Feed Products Co.
Willow Island—L & L Milling Company
Wisner—Albers Dehydrating Company

NORTH CAROLINA
Wake Forest—The Welles Company

NORTH DAKOTA
Mayville—Haugen Dehydrating Company
Minot—Big Sky Dehy.

OHIO
Graytown—Rohloff Brothers, Inc.
New Bremen—Bremco Alfalfa Mills, Inc.
Oak Harbor—Hayward, Inc.
Toledo—The A. B. Caplo Company

OKLAHOMA
El Reno—Waldo Alfalfa Milling Company
Muskogee—Choska Alfalfa Dehy. Mills
Cole Grain Company

PENNSYLVANIA
Allentown—Trexler Farms
Nazareth—Keystone Dehydrators
Sunny Slope Farms, Inc.

SOUTH DAKOTA
Vermillion—Sioux Alfalfa Meal Company

TENNESSEE
Memphis—Nickey-Eason Plantations, Inc.
Tiptonville—Reelfoot Alfalfa Mill

TEXAS
Brookshire—Brookshire Alfalfa Mills
Garwood—Garwood Dehydrating Co.
Hearne—Brazos Valley Dehydrating Co.
Plantation Dehydrating Co.
Kaufman—Star Brand Cattle Co.
Mumford—Mumford Alfalfa Milling Co.
Raymondville—Evergreen Farms, Inc.
Sherman—Grayson Alfalfa Dehy. Mills
Sugar Land—Sugarland Industries
Vernon—Greenbelt Dehydrating Co.
Wharton—Texophyl Products

WASHINGTON
Burlington—Chris Knutzen & Co.
Mount Vernon—Pierson Dehydrating Co.
Skagit Dehydrating Company
Snohomish—Floyd McKennon
Touchet—Ahlquist Dehydrator Co.

WISCONSIN
Fountain City—Groshik Dehy. Alfalfa
Oakfield—Mammoth Springs Canning Co.

BRITISH COLUMBIA (CANADA)
Chilliwack—Springbank Dehydration, Ltd.
Vancouver—Buckerfield's Ltd.

or 1.3494, while the parts of starter were held at their initial levels. Maximum growth occurred when calves received 17% alfalfa pellets the first experimental week and 19, 22, 25, 28, 32, 36, 40, 44, 48, 52 and 56% for the second through the twelfth experimental weeks, respectively.

In the above calf studies, vitamin D, in the form of irradiated yeast, was supplied in the calf starters fed. Workers at the Bureau of Dairy Industry (Reed, 1952), reported that when calves are fed artificially dehydrated alfalfa pellets as the sole source of roughage, rickets developed. Therefore, the need of additional vitamin D was indicated when artificially dehydrated alfalfa supplies the main source of roughage for calves.

Landby Dehydrating Co.
Manufacturers of Dehydrated Alfalfa Meal
Established 1946
A. J. Landby, Warroad, Manager
Res. Phone 153
Mill at Swift, Minn.

2. As a supplement to non-leguminous or poor quality roughage

Dairymen have recognized for some time the value of excellent quality leguminous hay as a supplement for poor quality roughage and for non-leguminous hay. The recent work of Burroughs and associates at Ohio, 1950, demonstrating increased digestibility of poor quality roughage by addition of alfalfa hay, gave evidence of the supplementary value of alfalfa.

Bartley et al., 1951, of the Kansas Station reported that the feeding of 0.5 lb. of dehydrated alfalfa pellets per 100 lb. of liveweight to cows fed prairie hay and sorgo silage resulted in 3.6 lb. more hay equivalent consumed/cow/day in one experiment and 4.4 lb. in another experiment (alfalfa hay was used in place of the prairie hay) than that observed in cows fed the basal rations. This resulted in a daily increase in milk production of 0.86 lb. for the first experiment and 1.2 lb. for the second.

Warren et al., 1954, studied the lactation response to the addition of graded levels of artificially-dehydrated and pelleted alfalfa to a basal ration of timothy-grass mixed hay fed ad libitum and grain fed on the basis of 1 lb. per 3 lb. of FCM in a 100-day trial. Twelve Guernsey and 12 Holstein cows whose average daily production of FCM and average live weight during a 30-day base period were 33.7 ± 1.9 lb. and 1083 ± 42 lb., respectively, were used. For each addition to the basal ration of 0.5 lb. of pelleted alfalfa from 0.0 through 1.5 lb. per 100 lb. of live weight, the following changes were found: a. The ad libitum consumption of timothy-grass mixed hay decreased 1.6 ± 0.1 lb. per cow per day, b. The grain fed increased 0.9 ± 0.1 lb. per cow per day, c. the dry matter, TDN, and NE intakes increased 4.0 ± 0.3 lb., 3.0 ± 0.2 lb., and 2.7 ± 0.1 therms per cow per day, respectively, d. the FCM increased 2.7 ± 0.4 lb. per cow per day, e. the live weight increased 0.20 ± 0.05 lb. per cow per day, and f. the pounds of TDN and NE required to produce a pound of FCM after accounting for maintenance requirements increased 0.066 ± 0.015 lb. and 0.065 ± 0.013 therms, respectively.

3. As a replacement for a portion of the grain

The early reports on the use of artificially dehydrated forages dealt largely with their grain replacement value (Huffman, 1939). Although these experiments were of short duration, partial or even complete replacement of the grain mixture by the young artificially dried grass or grass and legume mixtures was reported to cause no marked decline in milk production. Some observations on the unpalatability of finely ground dehydrated material were made.

Recent experiments on the value of artificially dehydrated forage as a grain replacement have been conducted at Washington State College by Hope et al., 1950. In an experiment where 15, 30 and 45% of the grain mixture was replaced by a dehydrated grass-legume mixture, significant decreases in milk production were observed. In addition, those animals receiving the 30 and 45% level of the dehydrated forage exhibited varying degrees of bloat and lack of appetite.

An additional study was conducted by these same workers (Blosser et al., 1952) in which chopped, finely ground and pelleted forms of dehydrated alfalfa as a grain replacement at the 30% level was used. In this experiment pelleted alfalfa resulted in an average daily production of 35.4 lb., finely ground 33.7 lb. and chopped 34.2 lb. The difference between the pelleted and ground hays was statistically significant.

Brown et al., 1952, of the Wyoming Agricultural Experiment Station reported that the addition of either artificially dehydrated alfalfa meal or pellets to a grain mixture for lactating cows resulted in lower milk yields. Also live weight gains were less for heifers fed, ad libitum, native hay and 3 lb. artificially dehydrated alfalfa pellets per heifer per day, than for heifers fed ad libitum native hay and 3 lb. rolled barley per heifer per day.

A comparison of 4th cutting alfalfa hay fed ad libitum with prairie hay fed ad libitum plus 2 lb. artificially dehydrated alfalfa pellets per calf per day by Ramery and Baker, 1953, resulted in slightly greater live weight gains and feed utilization in Holstein steer calves fed the alfalfa hay.

4. As a carotene, provitamin A, supplement

Carotene per se was found to be equivalent (on a weight basis) to approximately one eighth that of vitamin A (alcohol) for the maintenance of similar body stores of vitamin A as indicated by blood plasma and liver levels of vitamin A (Rousseau et al., 1954). For the prevention of physiological and histological changes, carotene per se was approximately equivalent to one fifth that of vitamin A alcohol.

These equivalencies were obtained at minimum levels of feeding of carotene from artificially dehydrated alfalfa meal and vitamin A from a dry carrier. It was recognized that at higher levels of feeding of these two substances the relative equivalencies became less (Guilbert et al., 1940).

Although no increases in the vitamin A or carotene stores of the newborn calf were observed when artificially dehydrated alfalfa leaf meal was added to the dam's ration prior to calving (Spielman et al., 1946), considerable increases in the caro-

"Our Brower Mixer paid for itself in 6 months ...brings in new customers"

. . . says F. H. BIRDEN
Albuquerque Feed Store
Albuquerque, New Mexico

"We have used your 2,000 lb. mixer for over 10 years and it is still in excellent operating condition. Our Brower Mixer paid for itself the first six months and helped bring in many new customers. We have found the Brower Mixer to be fast, dependable and thorough. We are well pleased with its performance and recommend it to anybody who is contemplating buying a mixer."

BROWER
Whirlwind
FEED MIXERS

The dependability, fast mixing action and low cost operation of Brower Mixers have made them the favorite of feed dealers everywhere. A perfect blend mixed in approx. 10 minutes—at a power cost from 3¢ to 5¢ per ton. Above-and-below-floor models. Five sizes—mixing capacities of 700, 1,200, 2,000, 3,000 and 4,000 lb. per batch. Heavy welded steel construction. Gives years of trouble-free service. Many exclusive features.

Write for full details

30 DAY TRIAL

BROWER MANUFACTURING CO.
402 N. 3rd St. - Quincy, Ill.

World's Largest Selling Mixer!

BEERMANN BROS. DEHY.

PAST-UR-LIKE
TRADE MARK

DEHYDRATED ALFALFA
SACKED OR BULK
PELLETS • GREASED MEAL

Call Any One of the Six Beermann Brothers:
RALPH
MEL
GORDON
WALTER
DICK
LOWELL

DAKOTA CITY
NEBRASKA
Phone: 2721

NOW—
FASTER, ACCURATE LABORATORY SERVICE FOR DEHYDRATORS

DOTY—
ADDS NEW EQUIPMENT, MORE SPACE

WE HAVE ADDED A SPECTROPHOTOMETER! What is it? It is a sensitive (and expensive) electronic apparatus that performs rapid and highly accurate measurements of chemical compounds that can be assayed by light. It is the ultimate in color measurement, permitting readings in every light wave length.

This new Beckmann Spectrophotometer gives quick and accurate carotene determinations by the chromotographic method . . . and the new machine can help dehydrators in other ways, too, such as accurate analysis of trace minerals and other micro-nutrients. And for better service, too, we have acquired additional space for our laboratories.

ASK ABOUT OUR SPECIAL-RATE LAB SERVICE PLAN

DOTY TECHNICAL LABORATORIES

8 West Ninth Street
Kansas City, Mo.
Call GRand 8580

Joseph Dotson, of Doty Laboratories, is shown here at the operating controls of the Beckmann Spectrophotometer for rapid carotene determination.

MEMBERS:
AMERICAN DEHYDRATORS ASSN.
MIDWEST FEED MFGS. ASSN.
AMERICAN ASSOCIATION OF CEREAL CHEMISTS
A Recognized Referee Laboratory

FATS IN FEEDS

REDUCE

FEED WASTAGE

Animals eat more when flavor is enhanced and dustiness controlled by fats. Pigs and chickens waste much dry feed because it runs out of their mouths before they get it moist enough to swallow. Feeders in windy areas lose excessive amounts of feed through blowing.

Fat reduces sifting through burlap bags and cracks in feed troughs by making fine feed particles adhere together, somewhat like pellets.

For Information—Ask a Member

NATIONAL RENDERERS ASSOCIATION

130 N. Wells St. Chicago 6, Ill.

ORGANIZED IN 1933

tene and vitamin A content of colostrum was found upon supplementing the dry cow's ration with artificially dehydrated alfalfa leaf meal prior to calving (Spielman et al., 1947). The performance, as indicated by weight gains and incidence of scours, of calves from dams fed supplementary artificially dehydrated alfalfa leaf meal prior to calving was superior to calves from dams fed the basal ration of timothy-clover mixed hay, corn silage and grain (Spielman et al., 1949).

The carotene and vitamin A content of milk has been reported to increase when artificially-dehydrated alfalfa pellets were added to a basal ration of alfalfa or prairie hay fed ad libitum, sorgo silage on the basis of body weight and grain based on milk production (Bartley et al., 1951) and to a basal ration of timothy-grass mixed hay fed ad libitum and grain based on milk production (Warren et al., 1954). The increases amounted to 11γ% carotene and 0.2γ% vitamin A for each 0.5 lb. alfalfa pellets fed per 100 lb. live weight per cow per day in the first mentioned study and 5 and 1.3γ% respectively in the second study. Increases of 3 to 5% in I.U. of vitamin A activity have been reported by Brown et al., 1953, due to adding approximately 20% artificially dehydrated alfalfa (pellets or meal) to a grain mixture fed on the basis of milk production along with alfalfa hay and sunflower silage fed ad libitum. When fed as the sole source of roughage, the form of the artificially dehydrated alfalfa affected carotene utilization (Hansen et al., 1954). The chopped form was well utilized; whereas, the pelleted form resulted in carotene and vitamin A content of milk considerably lower than the chopped form, even though the carotene intakes were approximately equal.

The carotene intakes of calves fed limited whole milk (approximately 150 lb.), limited starter and ad libitum artificially dehydrated alfalfa in the meal, chopped or pelleted form were found (Eaton et al., 1951 and 1952) sufficient to meet the National Research Council's recommended requirement of 60 micrograms of carotene per pound of body weight per day. In contrast field-cured and field-baled alfalfa hay which represented an average carotene content of field-cured and field baled hays found in a field survey (Burke, 1950) did not supply sufficient carotene to meet the requirement. The form of artificially dehydrated alfalfa fed did not affect the carotene utilization which is in contrast to that reported for lactating cows. In other studies (Dolge et al., 1952 and 1953) in which calves were fed ad libitum either fixed percentages of combinations, artificially dehydrated alfalfa and starter or increasing percentages of artificially dehydrated alfalfa with the starter percentages held constant, sufficient carotene intake was provided to meet in general the 60 microgram per pound of body weight requirement.

Recommendations

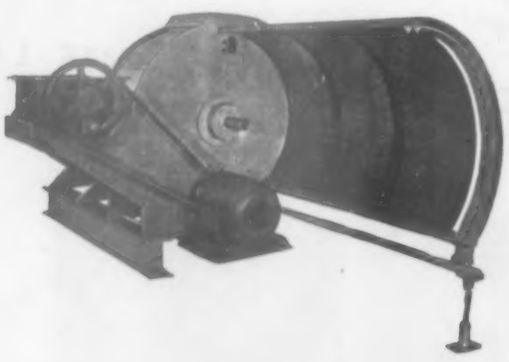
1. As the main source of roughage

Chopped or pelleted, artificially dehydrated alfalfa products are preferred to the ground form by dairy cattle when fed as the main source of roughage. In the case of the pelleted form, finely ground alfalfa results in a very dense pellet which causes lower consumption by dairy cattle. Therefore, the use of as coarsely ground alfalfa as is feasible is to be recommended for pelleting.

In the case of lactating dairy cattle, the chopped form of artificially dehydrated alfalfa may be used as the sole source of roughage. If the pelleted form is used, it should replace only 80% of the roughage, or

(Continued on page 31a)

WHICH GRINDER FITS Your MILL?



Choosing a hammermill type grinder to fill your special requirements is not an easy job—but you owe it to yourself to study the outstanding Hughes Revolutionary Grinder before you buy. We will be glad to send facts that illustrate why the Hughes saves labor, saves power, lasts longer. Remember this: Hughes Revolutionary Grinders are in operation in some of the nation's outstanding plants—plants in which no machines are used unless they can stand up under exhaustive tests. Send for list of users.

FOR LARGE PLANT OR SMALL

A REVOLUTIONARY GRINDER

YOUR BEST BUY!

Arthur M. Young

"The D. E. Hughes Company of Hopkins, Michigan, manufacturer of the first successful Hammermill with a remote control screen change, announces the appointment of Arthur M. Young as Director of Sales and Engineering. Young, a graduate of Northwestern University, was previously engaged in engineering and mill construction."

D. E. HUGHES COMPANY

HOPKINS, MICHIGAN

PRICING DEHYDRATED ALFALFA

(Continued from page 2a)

Table 6—Relative Essentiality of Dehydrated Alfalfa in Special Feeds

	Very essential	Desirable but not essential	Used if price is low enough	Never used	Do not manufacture this kind of feed	No answer	Total
Number of answers:							
1. Roughage extender	1	..	..	..	..	..	1
2. Dog food	..	6	..	2	..	..	8
3. Goat food	..	1	..	1	..	..	2
4. Fur food	..	1	..	..	..	..	1
5. Laboratory animal feed	1	..	..	..	..	..	1
6. Booster feed	1	..	..	..	..	..	1
7. Mill chop	..	1	..	..	..	..	1
8. Milk replacer	..	..	..	1	..	..	1
9. Calving ration	1	..	..	..	..	..	1
10. Dairy succulent feed	1	..	..	..	..	..	1
11. Stock ration	..	..	..	1	..	..	1
12. Chick developer	1	..	..	..	..	..	1
13. Lay breeder—chicken	1	..	..	..	..	..	1
14. Horse and mule feed	..	2	..	..	..	..	2
15. Poultry fodder greens	1	1	..	..	..	..	2
16. Turkey & poultry fitting	1	..	1	..	..	..	2
17. Duck starter	2	..	..	..	..	..	2
18. Rabbit pellets	10	1	..	..	..	..	11
Total	21	13	1	5	..	..	40

Table 7—Maximum Price to Be Paid for Dehydrated Alfalfa Assuming the Price of All Other Ingredients Stayed at Present Levels*

Price (dollars a ton)	Number of answers	Per cent of answers
60- 69	3	5.6
70- 74	4	7.4
75- 79	5	9.2
80- 84	8	14.8
85- 89	2	3.7
90- 94	6	11.1
95- 99	2	3.7
100-104	7	13.0
105-109	0	..
110-114	1	1.9
115-119	0	0
120-124	1	1.9
No answer	15	27.7
Total	54	100.0

*"Present level" was as of October, 1954.

Table 8—Prices That Would Encourage Extensive Use of Dehydrated Alfalfa Assuming the Price of All Other Ingredients Stayed at Present Levels*

Price (dollars a ton)	Number of answers	Per cent of answers
30-39	9	16.7
40-44	11	20.4
45-49	8	14.8
50-54	10	18.5
54-59	0	0
60-64	3	5.6
No answer	13	24.0
Total	54	100.0

*"Present level" was as of October, 1954.

Twelve indicated they would substitute sun-cured alfalfa; most of these indicating the necessity of adding vitamin A with the sun-cured alfalfa. Eight indicated the use of mill feed (bran, middlings, etc.); four, grain fermentation products; and four, corn gluten meal. These also to be used with additional vitamins to substitute for the dehydrated alfalfa meal. Other products mentioned were pigments of various kinds, cereal grasses, other greens such as kudzu meal, and unknown "factor" sources such as yeast, whey, distiller solubles, etc. Several commented that they would reduce the level of dehydrated alfalfa but would not take it completely out of the ration.

Part (b) of this question asked, "What would you consider too high a price assuming the price of all other ingredients stayed at present levels?" There was a range of prices (see table 7) of $60 to $120 per ton, with an average of $85 per ton.

Fifty-seven indicated that dehydrated alfalfa was not essential in some dairy feeds. They were asked, "Would you use it extensively in dairy feeds if the price dropped to very low levels?" There were 27 that answered yes, 12 answered no, 15 were uncertain and no answer was received from three. The second part of this question was, "At what prices would you make extensive use of dehydrated alfalfa assuming the price of all other ingredients stayed at present levels?" The price range (table 8) was $30 to $60 per ton, with an average of about $44. Over two-thirds of these estimates were in the $40 to $50 price range.

CALL Phone: WEbster 9-3155

BOB WHITE

Board of Trade Bldg. Chicago

for

Dependable Service when Buying or Selling Dehydrated

ALFALFA MEAL

10 Years' Experience with the Best Sellers and Buyers

Ask Us to Quote

Vegetable and Animal Proteins
Millfeeds, Alfalfa Meal, Molasses and other Feed Products

Telephone—GR 6122 Teletype—KC 370

HERRING Sales
BOARD OF TRADE KANSAS CITY, MO.

NEW and USED

DEHYDRATING MACHINERY

Heil-Arnold & Fox Repair Parts
Complete Installation or Moving Plants
Harvesters—Hammermills—Pellet Mills
Conveyors—Live Bottom Trailers

THE HOWARD MANN CO.

1800 Cockrell Ave. ● DALLAS, TEXAS ● PRospect 8055

TWINE-WIRE HEADQUARTERS

BULLDOG TOUGH!

THE FINEST AND MOST COMPLETE LINE OF BALER TWINE—BINDER TWINE AND BALING WIRE IN THE UNITED STATES

1—Holland Baler and Binder Twine

VOLTO HOLLAND twine is the FINEST QUALITY in the high quality twine field. It is knotless and evenly spun from the finest, strongest fibers obtainable. Treated against damage by insects or rodents. There is no better twine available anywhere. Let us send you full particulars.

2—Mexican Baler and Binder Twine

MODELO-BULLDOG is knotless and made from the best Grade A Mexican fiber. MODELO-BULLDOG is field tested and guaranteed to work satisfactorily in all types of twine-using balers. MODELO-BULLDOG is economical; its low cost results in more bales tied per dollar. Stocks available at key points, which means quick delivery. Write for prices.

3—Wilson Baling Wire

Of the thousands of boxes of WILSON BALING WIRE used last year, NOT ONE COMPLAINT! The reason, IT'S MADE RIGHT, of the highest quality metal, through precision methods. Write us for full information.

We are also headquarters for the finest DANISH and GERMAN twines.

See your wholesaler or write us

J. C. SHUFORD CO.

MERCHANDISE MART CHICAGO 54, ILLINOIS

Experienced in Cordage Since 1934

Alfalfa Dehydrating Revolutionized

By Joseph Chrisman

Executive Vice President, American Dehydrators Assn., Kansas City

It can be said truthfully that alfalfa dehydrating has gone through a revolution in the past three years. Probably few outside the industry realize how extensive these changes have been.

In this brief period the nation's dehydrators have spent and are still spending at the rate of several million dollars a year to provide the feed manufacturer with a better product. Today, as a result of this huge capital investment, feed manufacturers have available to them dehydrated alfalfa products that are greatly improved nutritionally, that are easier to handle in the feed mill and that can be supplied in more even quality and quantity all year around.

True, the alfalfa dehydrating industry has not yet reached perfection. There is still much progress that needs to be made and will be made. But the advancement of the past few years has been beyond any expectation and certainly is a record of which the dehydrating industry justly may be proud. We may claim honestly the attention of the feed buyer for a job well done in meeting his needs.

Inert Gas Storage Development

The recent development that has had the greatest ecoonmic impact is the rapid increase in storage facilities for preservation of carotene content of dehydrated alfalfa in a non-oxidizing atmosphere—"inert gas storage" as it is commonly called.

Three years ago, there existed facilities for only 7,000 tons of this kind of storage. Most of the carotene preserving storage at that time was in cold warehouses where the lower temperatures retarded the loss of carotene at a less efficient rate than is the case today. The first inert gas storage was installed in 1949 and the original plant was gradually enlarged to the 7,000-ton level in 1951.

Since that time expression has been rapid. As of now there are gas storage facilities available for 120,910 tons and plans are well matured to increase this to a total of 169,230 tons in time for use on the 1955 crop.

Following is a table which shows the location and size of gas storage facilities by states at the present moment and the total tons projected for the 1955 crop:

State	1954	1955
Kansas	44,500	67,500
Colorado	1,610	2,810
Nebraska	72,400	85,320
Ohio	2,400	7,400
Iowa		5,000
Indiana		1,200
	120,910	169,230

Let us stop for a minute to calculate what this means in terms of the average quality of dehydrated alfalfa meal. As a conservative average, this space will be filled and emptied one and one half times on a given crop, so that 253,845 tons of top quality dehydrated alfalfa will pass through these tanks each year. This will blend out with lesser quality meal on a basis of about two to one, so that these storage facilities represent the equivalent of approximately 380,800 tons of meal of guaranteed 100,000 A quality. When we add to this the normal summer production of 100,000 A and higher meal by producers who do not use such storage and who will sell to the feed manufacturer during that period, the total probably will come rather close to 500,000 tons of high quality product marketed by the industry.

In recent years the apparent norm for dehydrated alfalfa production appears to be somewhere around 1,000,000 tons. In years of good weather the total will run somewhat higher than this and with unfavorable weather the figure will drop below the million-mark.

We might say then the industry is now capable—or will be on the new crop—of producing 50% of its total output as a standardized 100,000 A product.

Contrast this with the figure of three years or more ago, when the total certainly was not in excess of 250,000 tons of 100,000 A production. In this short time, the industry has about doubled its top quality meal production.

In 1950, at a round table convention discussion in Colorado Springs between alfalfa dehydrators and feed manufacturers, the buyers laid great stress on the desirability of the alfalfa industry producing a standardized product on which the nutritionist could rely. Since that day, the dehydrator has come a long way toward that ideal goal.

Transformation of Shipping Pattern

One corollary of this development of inert gas storage in the middle west will probably be the reduction of shipments from the far western states to the middle west and beyond during the winter producing season

ALFALFA MEAL

Dehydrated and Suncured

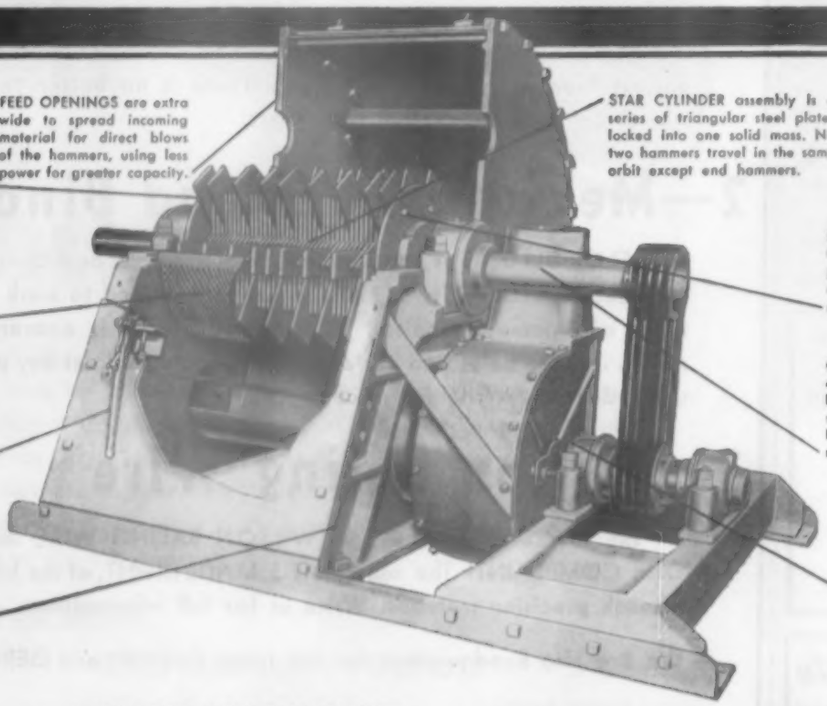
QUALITY-UNIFORMITY-SERVICE

RURAL DEHYDRATORS

Bird Island, Minnesota

Phone 2911

HERE'S THE SECRET . . . of W-W's LEADERSHIP!



HAMMERS are tipped with Tungsten Carbide much harder than the hardest steel or other alloy. Carbon steel bodies will not break.

FEED OPENINGS are extra wide to spread incoming material for direct blows of the hammers, using less power for greater capacity.

STAR CYLINDER assembly is a series of triangular steel plates locked into one solid mass. No two hammers travel in the same orbit except end hammers.

SCREENS are available with perforations from 1/32" to 2" and may be changed by simply lifting the grinder hood.

HAMMER PINS may be removed to replace hammers. Just one pin need be removed for changing one entire row of assembled hammers.

HOLD-DOWN LEVERS enable operators to snap hood open with a minimum of effort. Holds hood tight in closed position.

CYLINDER SHAFTS are oversize and extra heavy. On the three largest models, shafts are of special forged alloy steel which has been normalized and cannot warp.

MAIN FRAME is made of extra heavy grey iron to cut down vibration and resist corrosion — has wide spread base.

BLOWERS are made of heavy plate and are perfectly balanced. Fan blades are bolted on for easy, economical changing.

YOU EXPECT MORE . . . and MORE IS WHAT YOU GET!

Take an inside look at these features. Is it any wonder that W-W Hammermills have led the profit parade for over a half century! See how each feature complements each other . . . so that you get the most out of your grinding time. Make a thorough examination of the W-W Hammermill and you'll find why it is smoother running and requires less horsepower than any on the market. And it is rugged enough to handle your grinding problem. Available in eight standard models or designed to meet your specifications. Make it a point to write today for a complete catalog.

W-W GRINDER CORP. . . . DEPT. 311 . . . WICHITA, KANSAS

Joseph Chrisman

in the Southwest. This will eliminate some of the high freight charges which had to be attached to meal that came from the west, stopped in the middle west to be blended and moved on to the feed mixers in the east. But the higher cost due to this transcontinental freight will not be entirely offset by the development of gas storage, because such storage is considerably more expensive to build and the depreciation of these high cost plants will have to be met by the dehydrator.

This cessation of movement of meal from far western points will probably not, in the long run, have a very bad effect on the producers in those areas since, with the very rapid increase in population of the Pacific Coast states, the demand for meat, milk and eggs in that area is still expanding rapidly and, of course, that means greater need for various feed ingredients.

Another way in which the dehydrating industry has improved its output is in developing a product with less dustiness and with other characteristics of easier handling through pelleting, granulating and greasing.

Pelleting

It is sometimes difficult to say which is cause and which is effect. It appears that this rapid increase in inert gas storage of dehydrated alfalfa has been the cause for greatly increased pelleting capacity within the industry. Such bulk storage as is necessary when using inert gas, can hold double the tonnage of pellets that it could hold of meal, and since, as stated before, the investment is high it becomes important for the dehydrator to make the fullest possible use of his volume. This he can do by pelleting the product prior to its entrance into storage.

Pelleting, of course, has other advantages in that it produces a material relatively free of dustiness, a material which flows easily like grain, and does not bridge or arch in storage bins or hoppers. Alfalfa meal is particularly obnoxious in its capacity to bridge.

Some dehydrated alfalfa meal has been transported in bulk carloads during the past several years, even some dry, unoiled meal, but it does not lend itself to this mode of transportation quite as well as does the pelleted material. We now find many carloads of dehydrated alfalfa pellets and of both dry and greased meal moving over the railroads, some in ordinary box cars, and much of it in hopper bottom covered cars.

Here again the alfalfa dehydrator has laid a substantial amount of cash on the barrelhead in the way of new capital investment to give the feed buyer a product better suited to the buyers' needs. Pellet mills are not cheap, nor does the horsepower to run them come free. Here is the dehydrator's record of pellet equipment purchases in the past few years, gathered from the most reliable sources:

States	No. of mill units	Total hourly capacity, tons
Arizona	4	8
California	17	60
Colorado	25	71
Illinois	2	5
Indiana	1	2
Iowa	5	17
Kansas	22	65
Missouri	3	9
Minnesota	2	6
Nebraska	55	212
New Mexico	3	8
North Dakota	1	2
Ohio	5	22
Oklahoma	4	14
Pennsylvania	1	2
Texas	4	12
Total	154	515

(Continued on page 27a)

HAUGEN'S
DEHYDRATED
ALFALFA MEAL

Tops in Quality and Color

Haugen Dehydrating Co.
MAYVILLE, NORTH DAKOTA

TECHNICAL SERVICE LABORATORY
CHEMISTS ● BACTERIOLOGISTS
VITAMIN ASSAYS PROXIMATE ANALYSIS
CONSULTATION
SPECIAL PROBLEMS GENERAL TESTING
WRITE FOR PRICE SCHEDULE
657 W. Wisconsin Avenue • Appleton, Wisconsin

For Alfalfa Pellet Storage...

BS&B BOLTED STEEL TANKS
Have To Be Gas Tight!

To prevent deterioration of alfalfa pellets when held in storage, air is pumped out of the storage tanks and replaced with an inert gas at slightly higher than atmospheric pressure.

That's why the storage tanks must be *GAS TIGHT*... and why BS&B Bolted Steel Tanks were chosen for this purpose by National Alfalfa Dehydrating & Milling Co., one of the world's pioneers in the alfalfa dehydrating and pelleting field!

At their Lawrence, Kansas, plant shown above, National has expanded their existing storage facilities several times with the addition of new BS&B Bolted Steel Tanks. In 1949, 18 new tanks were installed ... in 1951, 10 more were added ... and in 1952, an additional 8 tanks were put into service. Each of these 36 tanks is 29 ft. in diameter and 24 ft. high. Total alfalfa pellet storage capacity is 13,000 tons!

BS&B Bolted Steel Tanks are also widely used in the Grain and Feed industries for the storage of grains, fish oils, vegetable oils and molasses. Whatever and wherever your storage requirements you'll be wise to *specify* Bolted Steel Tanks ... *by BS&B!* They'll meet your most rigid specifications—and at lower cost!

EFFICIENCY OVER 60 YEARS BS&B RELIABILITY

BLACK, SIVALLS & BRYSON, INC.
Agricultural Division — Dept. 10AK1
7500 East 12th Street Kansas City 26, Missouri

ASSOCIATE MEMBER, GRAIN AND FEED DEALERS NATIONAL ASSOCIATION

How Non-Oxidizing Dehydrated Alfalfa Storage Works

By Joseph Chrisman

Executive Vice President, American Dehydrators Assn., Kansas City

Storing dehydrated alfalfa in a non-oxidizing atmosphere has become a topic of major interest in the past year. The growth of the use of this particular method of preserving vitamin values has been rapid and extensive, not only among large producers but even among small and two drum operators.

The whole reason for going into "inert gas storage" (as it is often called) is to preserve the vitamins in dehydrated alfalfa which are subject to destructive alteration by oxidation. Carotene or pro vitamin A is the one we think of usually, but the other fat soluble vitamins are also subject to loss by oxidation. Vitamin K, the anti-hemorrhagic vitamin, and vitamin E, the fertility vitamin, are oxidizable. So also is vitamin C or ascrobic acid. This vitamin is relatively unimportant to the formula feed mixer, but K and E are important.

The normal loss rates of vitamins K and E have not been studied to nearly the extent that carotene loss rates have been.

Carotene losses are easily and fairly accurately predictable under normal dry storage conditions in normal atmospheres. Generally speaking those loss rates are a function of time and temperature. A 10° C rise in temperature will just about double the rate of loss.

By lowering the temperature to 0° F. or below, loss rates are reduced to a very low point even for long periods of time and by removing all oxygen from the atmosphere surrounding the product, time and temperature both lose their effect. No oxidization being possible, no loss occurs.

Small Losses

This presumes the ideal situation. Such situations seldom exist in practice so small losses will occur in "inert gas storage." By checking storage chamber gases at frequent and regular intervals and likewise checking the gas producer, an atmosphere of zero carbon monoxide and ½% or less of oxygen may be achieved. It should be remembered that it is only when oxygen is excluded that preservation is experienced and that the air we breathe is about 20% oxygen.

Probably most of the dehydrators who have entered this field of preservation are fully aware of reasons behind such methods and of the precautions to be taken, and the ultimate effect in the market place. There may be some however, who are merely following a popular trend and still others who have not adopted this system either for lack of funds, insufficient knowledge or perhaps fear of patent infringement and loss through suits.

As to patents infringement let us say that all of those who have come to us for advice or assistance have been informed of the fact that certain patents have been granted and that royalties have been paid to the owners of the patent for the privilege of storing dehydrated green forage crops under the conditions called for by the patents.

We cannot give advice on whether any piece of equipment or method or process in performing any particular function or phase of this industry's business is or is not infringing on any patent rights. We can only say that certain patents exist and leave it to individuals and their attorneys, engineers and experts of one kind or another, after study of such patents, to give such advice.

Whether or not the funds can be acquired to put in this method of preserving production is again a problem for each to decide for himself. The capital investment per ton of capacity can vary from $20 to $50 depending on the size of installation; material of construction of the tanks; method of loading and unloading; the nature of the stored product (i.e., meal, pellets or granulated pellets); and whether or not the investment includes blending facilities which are normally a must with such type of storage in the middle west. Even geographic location and the type of soil on which the plant stands enter into the picture.

If very soft water is not in good supply at a low temperature for a coolant then costs will include a water softener and perhaps a cooling tower.

If it is required to use a cooling tower then the chances are the cooling water will be fairly high in temperature in the mid-west area of hot fairly humid summers. In this event it may be necessary to install an auxiliary heat exchanger in the gas lines to the storage chambers to prevent unduly high humidities in them which might cause condensation.

If pellets are being stored or if it is contemplated, condensation may result even though a pretty good job of cooling gases and dropping free water out of them is done. We have heard of some instances of high moisture content in upper layers of pellets even when the input product was relatively low in average moisture content.

This may prove an unsolved problem. It might be that storing a mixture of pellets and meal or pellets and granules would overcome this. Such mixed storage would, we know, increase tonnage holding capacity per cubic foot of space.

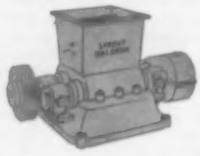
The natural gas consumed to produce a non-oxidizing gas for the storage chamber is a relatively small part of the operating expense.

There are several manufacturers of machines which are designed to burn the oxygen out of a controlled amount of air, to render it oxygen-free. In performing this function the ideal mixture resulting from the combustion will be about 12⅛% carbon dioxide and 87½% nitrogen with zero oxygen. Ideal conditions are seldom experienced over any appreciable length of time in a commercial activity of this kind. It is more likely to have an atmosphere containing ½% or less of carbon monoxide or ½% or less of oxygen. As between the two, we would choose to run the risk of a slight oxidization of carotene in the storage chamber rather than hazard the possibility of any one getting several deep breaths of ½% carbon monoxide.

SPROUT WALDRON'S 4 PLUS-FACTORS assure greatest satisfaction

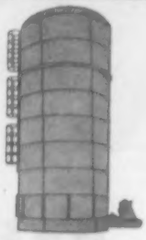
1. AMERICA'S MOST ADVANCED LINES OF

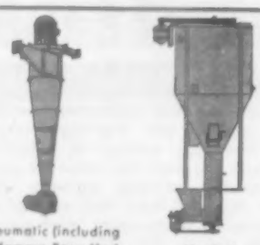
Corn Cutters and Corn Cutting and Grading Outfits


Crushers and Feeders

Reels, Separators, Aspirators, Sifters, and Grain Cleaners

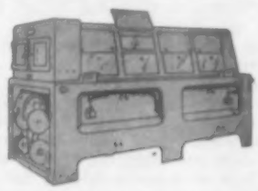
Molasses Mixers

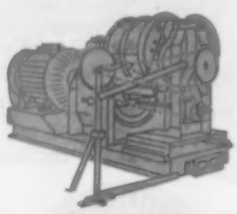

Harvestores, Bins, and Other Storage Equipment

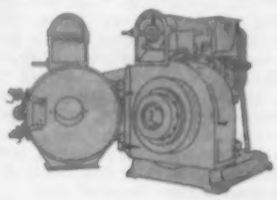

Pneumatic (including the famous Pneu-Vac), Screw, Belt, and Bucket Conveyors

Vertical, Horizontal, and Continuous Mixers

Pneumatic Bulk Trucks and Truck Unloading Systems


Buhler Bros. Flour Milling Machinery


Hammer, Attrition, Roller, and Burr Stone Mills


Pellet Mills, Coolers, Crumblizers, Cleaners, Graders, and Complete Pelleting Systems

BEFORE BUYING ANY GRAIN PROCESSING EQUIPMENT, CONSULT ›

Adding Fats and Oils To Alfalfa Meal

By Robert Fleming

National By-Products, Inc., Des Moines, Iowa

Considerable interest has developed over the past year in the use of fats and oils in dehydrated alfalfa meal. This interest has been accelerated by the desire of the alfalfa dehydrator and blender to improve the physical characteristics of alfalfa meal and by the availability of low cost stabilized animal fats and vegetable oils. It has been estimated that fats or oils were added to one third of all the alfalfa meal produced during 1954.

The advantages of adding animal fats or vegetable oils to alfalfa meal are readily apparent to the dehydrator. Dust control is one of the biggest problems facing the alfalfa dehydrator and fat addition is an ideal answer to this problem. Addition of 1 to 2% of fat per ton of meal after drying or during blending effectively controls dust, resulting in considerably improved working conditions during grinding and bagging. Bulk shipments of meal are also quite feasible after fat has been added. In addition to the joys of dust control, addition of fat greatly speeds pelleting of alfalfa meal and reduces wear of the pelleting dies. The color of alfalfa meal is improved and brightened by the addition of fat and, in many cases, the protein content is improved and shrink considerably reduced because of the capture of the high protein dust from alfalfa leaf meal.

These new techniques have made it necessary for the dehydrator to become familiar with products and terms with which he has not formerly dealt, and it would be helpful, therefore, to discuss briefly the sources of fats and oils and the terms used to describe the various grades of fats and factors affecting their quality and price. Animal fats are considered to be either edible or inedible. Edible fats are those high quality tallows and lards which are used for human consumption. Inedible fats are all other animal fats which are rendered from animal tissues that are classified as not suitable for human consumption. It should be remembered, however, that these fats are processed at sterilizing temperatures and from all points of view are quite suitable for use in dehydrated alfalfa meals. The term oil is used to describe vegetable oils such as soybean oil, linseed oil, rice bran oil, etc., which are processed by crushing vegetable seeds and extracting the resulting oils. Inedible animal fats are probably of the most interest to dehydrators because of their low cost and plentiful supply.

Fats, Tallows and Greases

For the purposes of this article, the term "fat" is taken to mean the naturally occurring animal fats with melting points around 100 to 115° F. and does not include the socalled "dry fats" which are produced by hydrogenation of regular fats and which have a considerably higher melting point. Fats are described by the terms "tallow" or "grease" depending upon their hardness or melting point. Hard fats are tallows and soft fats are greases. Depending on their color, free fatty acid content and the amount of moisture and impurities present, fats are further classified in various grades.

The hardness of an animal fat is described in terms of "titer" which is the melting point of its fatty acids expressed in degree centigrade. Fats having a titer of 40° C. or higher are tallows and fats having a titer below 40° C. are greases.

The color of a fat is determined by comparing a melted and filtered sample of the fat with a series of standard color tubes. The colors are known as the "F.A.C. colors" and are numbered from one to 45 in odd numbers.

Fats are chemical combinations of glycerine and fatty acids. Under certain circumstances, in the presence of heat and moisture, fat begins to break down into free fatty acids and free glycerine. The glycerine is soluble in water and disappears, but the free fatty acids remain. The presence of brass and copper hastens this reaction, hence brass and copper valves or pipe should never be used to handle the fats. The free fatty acid content of fats is of utmost importance in determining the quality because it is an indication of the quality of the source material and of the treatment that the fat has received since rendering.

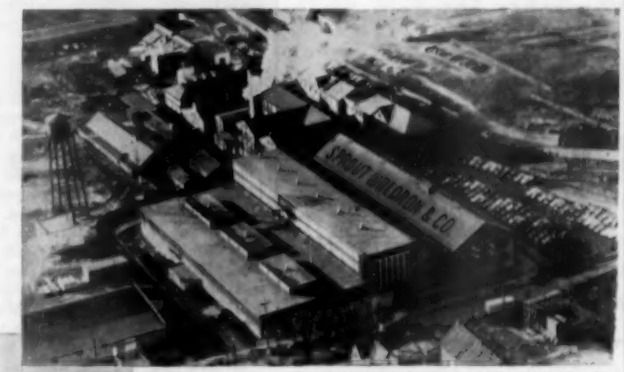
Although fats are washed and settled and frequently filtered during processing, they usually contain small percentages of free moisture and suspended impurities. These rarely exceed ½ of 1% and do not affect the value of the fat for use in alfalfa meal. Over a period of time, the moisture and impurities will collect in the bottom of the storage tank so it is recommended that the fat be pumped from the bottom of the tank when used; or, if this is not done, that the tank be cleaned periodically. The value or price of the fat is determined by its titer, color, free fatty acid content and percentage of moisture and impurities.

Fat Stability

Under present trading standards, the stability of a fat is not a factor in determining its price, but stability is one of the most important considerations to the alfalfa dehydrator purchasing fat for inclusion in alfalfa meal. Rancid fats are fats in which the process of oxidative rancidification has progressed to the point where sharply unpleasant flavor and odor are noticeable. The stability of a fat is the ability of the fat to resist this process of rancidification and is generally measured by the length of time the fat can be aerated before it becomes rancid. As we stated before, fat is a chemical combination of glycerine and fatty acids. Some of these fatty acids have the ability to react with oxygen to form compounds known as peroxides. These peroxides and other compounds formed with them are responsible for the flavor and odor associated with rancidity. Thus, when a fat is subjected to aeration, the peroxides are gradually formed and, sooner or later, the fat becomes rancid. Very

2. UNMATCHED ENGINEERING & MANUFACTURING FACILITIES

Sprout-Waldron is America's largest builder of equipment for the feed milling industry, and, we believe, the country's largest center of research and development in the field. You'll find the latest and best in complete lines of equipment for pelleting, mixing, grinding, cutting, crushing, conveying, classifying, and separating at Sprout-Waldron.



The Sprout-Waldron plant, Muncy, Pa., that has recently undergone a million and a half dollar expansion and modernization program.

The new Sprout-Waldron plant for the production-line manufacture of the Sprout-Waldron Pneumatic Bulk Truck.

3. NATION-WIDE FIELD STAFF FOR QUICK, PERSONAL SERVICE AND CONSULTATION

Sprout-Waldron engineering representatives cover the country. They provide on-the-spot, personal consultation and guidance quickly...without charge or obligation. Ask your SPROUT-WALDRON MAN for guidance on your next installation. You'll save time and trouble.

4. 89 YEARS OF EXPERIENCE THAT CAN SAVE YOU MONEY

When you deal with Sprout-Waldron, you get the benefits of 89 years of accumulated experience in solving feed milling problems plus the know-how of an expert staff who have devoted lifetimes to the feed industry. Improved methods, new cost-cutting ideas, and better time-and-labor-saving devices are constantly being developed by Sprout-Waldron engineers and applied to Sprout-Waldron equipment.

Whatever your problem — a large or small installation . . . a specialized application . . . a complete feed mill — see your SPROUT-WALDRON MAN for the ONE BEST answer.

Write or call . . .

SPROUT-WALDRON

61 KOGAN STREET • MUNCY, PA.

Exclusive Canadian Distributors: Strong-Scott, Limited, Winnipeg

America's largest manufacturer of grain processing equipment

HECO Screens & Hammers

Preferred by the Dehydrating Industry

HAMMERS and SCREENS • ALL SIZES

FOR ALL TYPES OF HAMMER-MILLS

Tempered High Quality Steel

Punched for Maximum Capacity

Attractive Prices and Discounts

Large Warehouse Stocks

Prompt Shipment

EDWARD J. HECK & SONS CO.

1102 FARNAM Atlantic 6666 OMAHA, NEB.

ALL TYPES OF EQUIPMENT AND REPAIRS FOR FEEDMILLS, GRAIN ELEVATORS, DEHYDRATING AND ALLIED INDUSTRIES

There's no MAGIC in SIOUX ALFALFA MEAL

It isn't done with mirrors. The superior performance of Sioux Alfalfa Meal is simply a blend of experience, skill and care—in growing and selecting the finest alfalfa, in proven processing techniques, and in proper packaging and handling procedures. A reputation for quality and service cannot be pulled out of a hat—it must be earned.

SIOUX ALFALFA MEAL CO.

VERMILLION, SOUTH DAKOTA

Dehydrated Alfalfa Meal SIOUX ALFALFA MEAL *Suncured Alfalfa Meal*

little aeration takes place in a storage tank because only the top of the fat is exposed to air; but, when the fat is dispersed in alfalfa meal, considerable aeration is possible. Consequently, fats which are to be used in dehydrated alfalfa meal must be quite stable so that they will not become rancid before the meal is consumed, and this may not be for many months.

All fats have some natural stability, but it varies considerably and the causes of these variations are not fully understood. It is not safe to assume that even the highest quality fat will have enough natural stability to qualify for alfalfa use because the factors which determine fat quality usually have little to do with its ability to resist rancidity. Therefore, it is absolutely essential that the fat be treated with a chemical antioxidant to insure that it will not become rancid. The most effective antioxidants which are now approved by the Federal Food & Drug Administration and the U.S. Department of Agriculture inspection branch are butylated hydroxyanisole, butylated hydroxytoluene, propyl gallate and citric acid in any one of several mixtures. These must be thoroughly mixed with the fat in sufficient quantity to meet the stability requirements determined by the American Meat Institute Foundation.

Peroxide Value

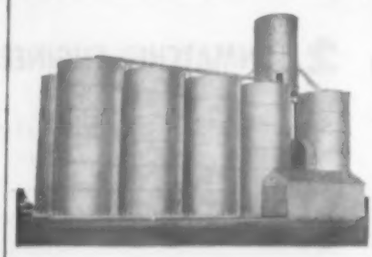
The state of rancidity of a fat can be determined by measuring the amount of peroxides which have developed in the fat. This is reported as the "peroxide value" of the fat. Animal fats are considered rancid when they have reached a peroxide value of 20. Stability of a fat is determined by measuring the number of hours of aeration at an elevated temperature that are required to make the fat rancid. This test is known as the active oxygen method or the AOM test, and is performed by bubbling air through samples of the fat which are held at a prescribed temperature and measuring the number of hours required to reach a peroxide value of 20. Fats for use in dehydrated alfalfa meal should have a minimum stability of 20 hours AOM and this should be guaranteed by the supplier of the fat. It must be remembered that the 24-hour guarantee is based on an accelerated test and does not mean that the fat will be stable in an alfalfa meal for only 20 hours. A 20-hour fat should remain stable in alfalfa meal for a considerable period of time, although alfalfa meal which is going into lengthy storage will require a higher stability, probably at least 30 hours.

The importance of stability in a fat to be used in alfalfa meal cannot be overemphasized because, if the fat becomes rancid after it is mixed with the meal, there is a considerable danger that the vitamin A content of the meal will be damaged. A properly stabilized fat enhances the vitamin A stability of the meal, but a rancid fat destroys it quickly.

Fats Suitable in Dehydrated Alfalfa Meal

With these terms in mind, let us now consider briefly the grades of fats and oils which are suitable for use in dehydrated alfalfa meal. Practically all vegetable oils may be used in alfalfa meal because, generally speaking, they are of low free fatty acid content and usually of good stability. The limiting factor in vegetable oils is the cost, and this may make some vegetable oils undesirable for use in alfalfa meals. Present experimental evidence indicates that the only limitation that need be placed on animal fats are that they have a stability of at least 20 hours AOM and that their free fatty acid content is not excessive. In the amounts used, the color of a fat has no effect on the color of alfalfa meal except to improve it, and color, therefore, is of little concern. From the standpoint of hardness, both greases and tallows may be used in dehydrated alfalfa meal except that in the wintertime if tallow is applied to a cold meal in a blending plant, it will be necessary to heat the tallow to about 165° F. so that it stays sufficiently fluid to mix thoroughly with the cold meal. In the summertime, however, both tallow and grease, if thoroughly melted, will mix perfectly well with warm meal coming from the drier. The moisture and suspended impurities in fat are generally of such low amounts that they need not be considered a factor in determining a grade of fat to be used in alfalfa. From the standpoint of cost, it is apparent that the lowest grade of fat which may be used safely is the best because, the lower the grade, the lower the cost.

Thus, it may be summarized by saying that either grease or tallow may be used regardless of its color as long as the stability is not less



Find your BUTLER contractor listed here

DELAWARE: O. A. Newton & Son Company, Bridgeville

GEORGIA: Mr. Henderson Steele, 991 Tatnal St., Macon

IDAHO: J. H. Wise and Son, 222 Broadway, Boise
Louis A. Thorson, 277 Pierce St., Twin Falls

INDIANA: Shinkle Construction Co., 2406 Main St., Elwood

IOWA: Todd & Ray Construction Co., Ames
Mill & Elevator Service Co., P. O. Box 141 Highland Park Station, Des Moines 13
General Equipment & Manufacturing 423 Central Avenue, Fort Dodge

KANSAS: Ernest Engineering Company, Topeka 601 North Van Buren

MINNESOTA: Hoganson Construction Company 622 Flour Exchange Building, Minneapolis
Olson Elevator and Mill Supply, 474 Wheeler, Mankato

MISSOURI: Kansas City Millwright Company Board of Trade Building, Kansas City
The Essmueller Company 1220 South 8th St., St. Louis

MONTANA: Burt Talcott Builder 2600 Ninth Ave. North, Great Falls

NEBRASKA: Jones Construction Company, Grant
G. E. Morrison Construction Co. 4510 Cuming Street, Omaha

NORTH CAROLINA: Aeroglide Corporation 510 Glenwood Avenue, Raleigh

NORTH DAKOTA: Koland Construction Co., Bottineau

OREGON: Heaton Steel and Supply Company 428 Spring Street, Box 390, Klamath Falls
Erection Portland Company, Inc. 5595 N. Lagoon Ave., Swan Island, Portland 18

PENNSYLVANIA: Sprout-Waldron & Co., Inc., Muncy

SOUTH DAKOTA: All-State Engineering Company 520 Second Avenue, N. E., Aberdeen

TENNESSEE: W. J. Savage Company, Flour and Feed Mill Division, Clinch Avenue, Knoxville
Dabney-Alcott Supply Co., Inc. 32 West Iowa Avenue, Memphis 5

TEXAS: E. O. Ross, Inc. 1903 North Lexington Blvd., Corpus Christi
Briggs-Weaver Machinery Co., 5000 Hines Blvd., Dallas
Wallace Sales and Engineering Co. P. O. Box 899, Wichita Falls

WASHINGTON: The Haskins Co., 3613 Main St., Spokane

WISCONSIN: Roy E. Kippert 4202 Hillcrest Drive, Madison

BUTLER MANUFACTURING COMPANY

than 20 hours AOM and the free fatty acid content is not excessive.

Fats and oils are shipped in railroad tank cars of approximately 8,000 gal. capacity, in truck transports of approximately 3,000 gal. capacity, or in 55-gal. steel drums.

Tank cars and truck transports must be equipped with coils for steam melting. The melting point of animal fats is at least 100° F. and, of course, they must be heated to higher temperatures than this to cause circulation and complete melting of the entire mass. Fat received in tank cars or transports must be melted by steam and a 15 H.P. boiler operating on about 50 lb. pressure is generally required. Depending on the temperature and titer of the fat, from four to 10 hours is usually required to melt a tank car. Drums may be melted by steam, hot water bath, gas flame or electric heaters. If flame or electric heaters are used, care must be taken not to get a small portion of the fat overheated before circulation begins, since scorched fat develops dark colors, higher free fatty acid content and a bad odor, and because of the possibility of fire. Steam coils in tank cars and trucks should be carefully drained in cold weather to prevent freezing. Condensed steam from heating coils should not be returned to the boiler since fat might get back to the boiler through a leaking coil.

Fat should be moved with gear type pumps, the size to be determined by the amount of fat to be handled. The pumps should be all iron construction or stainless trim if desired. Brass or bronze trims should not be used because copper reacts strongly with the antioxidants to render them ineffective, and it also reacts with the free fatty acids in the fat. Fat must be thoroughly drained from the pumps after use or some method of heating the pump must be provided such as steam tracer lines or electric heating tapes. Pumps should be turned by hand before starting to insure that they do not contain solidified fat. All pipes should be pitched so that the fat will drain from them and oversized pipes should be used to eliminate possibility of plugging. Copper pipe should not be used to handle stabilized fats or oils. Long runs of pipe outdoors should be insulated or heated by steam tracers or by electric tape. Pipes can be blown clear with compressed air after use.

If fat is received in tank car quan-

(Continued on page 27a)

See your

BUTLER

contractor for

TURN-KEY INSTALLATION

with BUTLER bolted steel tanks

Your Butler contractor will completely take over your storage building problems. He will do the entire job from early planning and design right down to checking the completed installation. His experienced crews will build the foundation, erect the Butler bolted tanks and install the equipment.

You can depend on the speedy erection and the low initial cost of Butler bolted grain tanks to guarantee minimum construction cost. And, year after year, you can count on low maintenance costs.

Call your Butler contractor right away (see listing on opposite page). He'll help you start your building program moving in a hurry with low-cost, permanent Butler grain tanks. If there is no contractor listed in your locality, write the Butler office nearest you.

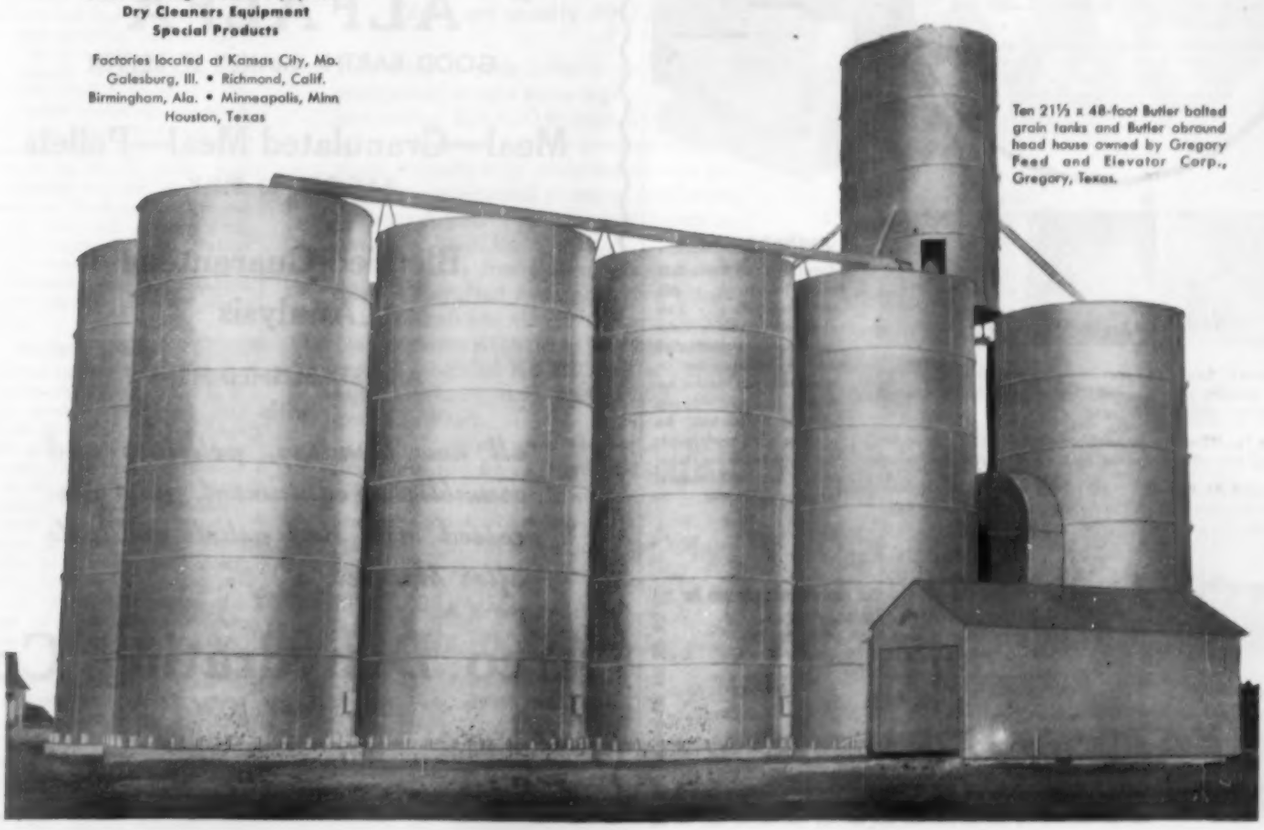
BUTLER MANUFACTURING COMPANY

7402 East 13th St., Kansas City 26, Mo.
902 Sixth Ave., S.E., Minneapolis 14, Minn.
1002 Avenue W, Ensley, Birmingham 8, Ala.
Dept. 2, Richmond, Calif.

BUTLER

Manufacturers of Oil Equipment
Steel Buildings • Farm Equipment
Dry Cleaners Equipment
Special Products

Factories located at Kansas City, Mo.
Galesburg, Ill. • Richmond, Calif.
Birmingham, Ala. • Minneapolis, Minn
Houston, Texas



Ten 21½ x 48-foot Butler bolted grain tanks and Butler obround head house owned by Gregory Feed and Elevator Corp., Gregory, Texas.

Present Status of Studies on

Antioxidants for Preservation Of Carotene in Dehydrated Alfalfa

By Dr. H. S. Olcott

EDITOR'S NOTE: Dr. H. S. Olcott is head of the field crop utilization section of the Western Utilization Research Branch, Agricultural Research Service, U.S. Department of Agriculture, Albany, Cal.

The preservation of carotene in dehydrated alfalfa continues to be a problem of vital concern to the dehydrator owner, blender, alfalfa broker and mixed feed manufacturer. The use of refrigeration to reduce loss is continuing to a limited extent and a large increase in facilities constructed for storage in an inert gas are reported. However, for many operators the use of an antioxidant in oil solution to reduce carotene loss and prevent dustiness of the meal would provide great benefits if certain difficulties could be avoided.

Kraybill (4) has recently reviewed the use of antioxidants in feeds and has called attention to the necessity for complete toxicity tests on compounds prior to their use. He enumerated the antioxidants, butylated-hydroxy-anisole, propyl gallate, nordihydroguaiaretic acid, butylated-hydroxytoluene and lecithin, as those presently approved by the Federal Meat Inspection Service for use in feeds. The recent use of antioxidants to control encephalomalacia in chicks was also pointed out. Studies at the Western Utilization Research Branch and Kansas State College (2, 5) have shown that the addition of oils to alfalfa at levels of 4-5% are very beneficial in preserving carotene.

Effective Compounds

The compounds which have been found to be most effective for preventing carotene destruction in alfalfa meal are 6-ethoxy-1,2-dihydro-2,2,4-trimethylquinoline (Santoquin) N,N'-diphenyl-p-phenylene-diamine (DPPD), N,N'-diphenyl-hexamethylenediamine, 2,5-ditert-butylhydroquinone and 2,5-ditert-amylhydroquinone.

Generally, Santoquin and closely related quinoline-type compounds are the most effective antioxidants. Recent studies at the Western Utilization Research Branch by Bickoff et al. (1) of a series of related quinoline derivatives have reemphasized this fact. At levels of 0.015% in a particular alfalfa, Santoquin preserved 66% of the original carotene for 24 weeks at 25° C. DPPD gave retention of 33%. The two substituted hydroquinones gave retention of about 50%. Controls were reduced to 23%.

The physical properties of Santoquin with regard to formulation are superior to those of the other compounds, all of which are crystalline solids at room temperature. Santoquin is a syrupy liquid, miscible with oil over a large range of concentrations. To obtain an oil solution of the remaining compounds requires either prolonged stirring or heating of the antioxidant and oil or the use of some pre-mix and/or a co-solvent which can be added to an oil carrier.

The use of Santoquin on alfalfa is covered by a patent, U.S. No. 2,562,970, granted to Thompson (6), at the Western Utilization Research Branch, and assigned to the U.S. Secretary of Agriculture. Licenses are available on a royalty-free basis upon application to the Agricultural Research Service, U.S. Department of Agriculture. The use of the substituted hydroquinones are covered in a like manner under U.S. Patent No. 2,611,703 (7). Kephart (3) obtained patent coverage on DPPD, U.S. No. 2,474,182 and assigned the rights to National Dehydrating & Milling Co., Lamar, Colo.

Toxicity Tests

A series of toxicity tests on the substituted hydroquinones are in progress at the Southwest Poultry Experiment Station under the direction of Burt Heywang, but until complete feeding data on these compounds are available and they are shown to be safe for use in animal feeds their use is precluded. No toxicity tests on N,N-diphenylhexamethylenediamine have been published to date. DPPD has been tested for toxicity and is presently allowed by the Federal Food and Drug Administration at a level of 125 parts per million (0.25 lb./ton) in finished poultry feed. This results in a much higher concentration than the 150 parts per million (0.3 lb./ton) of Santoquin allowed in alfalfa meal which is diluted out with other feed ingredients 10-50 fold in formulation thus resulting in a final concentration of 3-15 p.p.m. in the finished ration.

The fact that the use of these products is allowed for poultry feed only limits their usefulness because once a particular lot of meal is treated it is the responsibility of all concerned to insure that it eventually becomes incorporated into poultry rations. Although about 60% of the dehydrated alfalfa is used for poultry feeds, this limitation on final use has prevented many producers from applying an antioxidant. Many are already using either vegetable oils or animal fats for controlling dust and

For the feed manufacturer, custom grinder, or industrial processor

FEED MILLS DIXIE PROCESS GRINDERS

2 SERIES
6 WIDTHS
8 STYLES
30 TO 200 H.P.

Available from distributors in all parts of the country

CLOSED-THROAT models can be furnished in 20" diameter (for granular grinding of free-flowing materials) and in 24" diameter (for pulverizing free-flowing fibrous materials).

The photos above show four possible positions in which the motor, mill feed inlet, and fan discharge outlet can be installed on models having separately-driven fan. Assemblies as shown in photo B and D are available on models with shaft-mounted fan.

OPEN-THROAT models, having 24" diameter, are available for a wide range of grinding operations—whether material is bulky, free-flowing, friable or fibrous.

1. 2. 3.

1. "Slide-Out" Screen Change eliminates necessity of tearing down grinding chamber. Just open mill enclosure door—pull out screen—slide in replacement.

2. Sliding Fan Motor Mount permits maintenance of fan or fan housing liners without removing the fan housing or discharge line.

3. Adjustable Air Control varies suction through the screen—furnishes additional air for conveying—prevents material build-up under screen.

Compare advantages offered by Dixie Mills: Full-length foundation • All-steel construction • Low inlet hopper for better feeder line pitch • Perfect shaft and bearing alignment • Rotor discs and spacers machined and individually balanced • "No-leak" fan housing with replaceable abrasion-resistant steel liners • Easy replacement of hammers and screen.

We'd like to send you a copy of Bulletin D-110, which fully describes the complete line of Dixie Open-Throat and Closed-Throat Hammermills. For your copy—or further information—why not use this convenient coupon?

DIXIE MACHINERY MFG. CO.
4200 GOODFELLOW BLVD. • ST. LOUIS 20, MO.
Division of Bath Iron Works Corporation

☐ Please send me a copy of the Dixie Hammermill Bulletin No. D-110 ☐ Please have your distributor call

Name_____
Company_____
Address_____
City_____ Zone____ State____
D. M. 98

ARCO
DEHYDRATED
ALFALFA
GOOD EARTH—MAKES IT BETTER

Meal—Granulated Meal—Pellets
BAGGED or BULK

Blended-Guaranteed Analysis

AN ESTABLISHED FIRM
with
all new blending, pelleting and crumblizing equipment. New processed meal and pellets available after May 1st.

Arco Dehydrating Co.
LAKE PARK, IOWA

C. E. Arnold, Mgr.
Phone 4261

Dr. H. S. Olcott

because of the improved properties of the meal, the practice is increasing. The addition of antioxidants would, therefore, be a comparatively simple change.

Heating Is Beneficial

Of particular interest are the findings of Mitchell et al. (4) at Kansas State College, who found that heating alfalfa meal following the application of antioxidants in oil solution gave a considerable increase in the retention of carotene over unheated antioxidant-treated controls.

Attempts to obtain data on the toxicity of Santoquin to animals other than poultry are in progress. Preliminary studies with rats showed that the acute oral toxicity was low. An LD 50 of 800-1,000 mg./kg. was obtained. With mice, an LD 50 for intraperitoneal injection of 1,000 mg./kg. was obtained while intravenous injection gave 178 mg./kg. Santoquin was mildly irritating to the skin of rabbits and guinea pigs but produced no skin sensitization.

Continued feeding of the compound for 430 days at levels of 0.2 and 0.4% in the diet produced normal appearing rats. These levels are 265 and 530 times the "normal" level which is considered to be that given by adding 5% of treated alfalfa (0.015% antioxidant) to a ration. This results in a final concentration of 7.5 parts per million of chemical in the finished feed. Some microscopic kidney damage was observed in male rats getting 0.05% (67% "normal") in the diet and a questionable amount of damage to females on 0.2% (265 X "normal"). No damage at lower levels was obsreved. However, these experiments are still in progress and final evaluation which will be done in March, 1955, may show a different picture. A possible accumulation of Santoquin in fat and kidney was observed at the 0.2% level (265 X "normal"). Verification of this and data showing at what level no accumulation occurs should be available when the present study is concluded.

Further Results

Unpublished experiments on pigs at the University of Illinois by Dr. L. E. Card and co-workers showed that feeding both 20 and 200 X the "normal" level gave good growth, feed efficiency and no evidence of abnormalities. A similar experiment with calves in which the animals received 200 and 2,000 X the "normal" levels caused death in three of four calves on the upper level either by toxicity or starvation because the animals refused to eat the high level. At the lower level no effect on growth or appearance was noted for a period of 109 days.

Whether or not this compound is allowed in feeds for animals other than poultry is yet to be decided. The present incomplete indications show a good margin of safety between the proposed levels of use and the point at which toxicity occurs. Most of the compound seems to be metabolized and excreted rapidly. Accumulation in various animal tissues after feeding high levels for long periods is small. It is anticipated that a decision as to its use can possibly be reached before the 1955 production season gets under way.

References Cited

1. Bickoff, E. M., Livingston, A. L., Guggolz, Jack, and Thompson, C. Ray—J. Agr. Food Chem., 2, 1229 (1954).
2. Bickoff, E. M., Thompson, C. R., Livingston, A. L., Van Atta, G. R., and Guggolz, Jack—J. Agr. Food Chem; in press.
3. Kephart, J. C.—U.S. Patent 2,474,182, June 21, 1949.
4. Kraybill, H. R.—Feedstuffs, 26, 49, p. 44 (1954).
5. Mitchell, H. L., Beauchene, R. E., and Silker, R. E.—J. Agr. Food Chem., 2, 939 (1954).
6. Thompson, C. R.—U.S. Patent 2,562,970, Aug. 7, 1951.
7. Thompson, C. R.—U.S. Patent 2,611,703, Sept. 23, 1952.

LARGE ROOT SYSTEMS

Alfalfa probably has one of the largest root systems among plants of comparable size. In Nebraska, roots of alfalfa have been traced to a depth of 40 ft. in certain soil types.

Constituents of Alfalfa

About 75% of the dry weight of alfalfa is composed of constituents such as fats, proteins, ash fiber, starch and sugars; the remaining 25% is a complex mixture about which little is known. This is information contained in a report of the chief of the Bureau of Agricultural and Industrial Chemistry.

One half of this fraction is water-soluble, and the presence of such constituents as vitamins, flavonoids, alkaloids, saponins, tannins and other physiologically active materials has been either established or indicated by analytical studies.

Feeding experiments and chromatographic examination at the Western Regional Research Laboratory showed the presence of at least 12 constituents, three of which are presumably flavonoids. Two of the flavonoids were obtained in crystalline form.

One is similar to or identical with tricin, a compound isolated by British and Canadian workers, and suggested by them as a possible causative factor in bloat of cattle, the report adds.

Antioxidants in Alfalfa

The lipid fraction of alfalfa contains carotene, chlorophylls, fats, waxes and incompletely characterized substances. Two of the latter are the xanthophylls and antioxidants. Study of this fraction showed that it contains at least two antioxidants in addition to the tocopherols. These two constitute more than half the antioxidant content of alfalfa. Concentrates of eight hundredfold have been prepared, according to the Bureau of Agricultural and Industrial Chemistry.

ALFALFA—A THIRSTY PLANT

Alfalfa requires tremendous amounts of water for maximum growth—from 500 to 1,000 lb. water to produce each pound of dry hay.

Feeds are better with whey—better with

KRACO FRESH-DRIED WHOLE WHEY

Guaranteed at least 65% lactose
(Runs are usually 70-72%)

Add whey to your feeds to produce fast, economical weight gains in poultry, swine and calves. KRACO is fresh-dried whole whey. This pure milk by-product supplies these animals with whey factor—an important nutritional element producing such good results that many farmers insist on whey in their feeds.

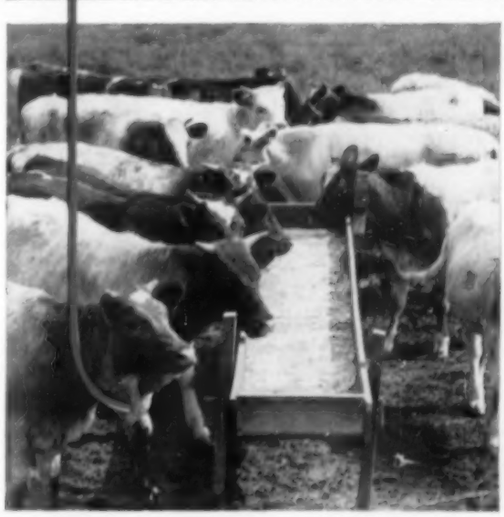
KRACO is fresh! Dried immediately after it's drained from glistening cheese vats in Kraft's modern processing plants. No chance for KRACO to get *stale* or *high-acid*. Fresh-dried KRACO is the world's most famous *low-acid* whey. *Quality guaranteed by Kraft.*

KRACO is all whey! Nothing added, nothing taken away. Pure KRACO contains all the whey nutrients: lactose (guaranteed minimum 65%), milk protein (12%, mostly lactalbumen), milk minerals, and vitamins.

A Kraft Product

Order from **PHENIX FOODS COMPANY** *(Distributor)*

460 East Illinois Street
Chicago 90, Illinois



Help your hog producers

Let your customers be sure—
with highly fortified feeds that
contain the most effective antibiotic . . .

Prevent

LOSSES FROM

"Scours"

(caused by bacteria)

Grow *more* thrifty, uniform pigs *faster*

with the use of good feeds and supplements that contain effective levels of* AUREOMYCIN *CHLORTETRACYCLINE

Feed manufacturers who sell hog feeds and supplements containing AUREOMYCIN Chlortetracycline have the advantage of being able to offer the *best possible protection* to hog producers.

All through 1955, you can keep giving your customers an unmatched service! You can keep telling them how to avoid losses this *way:*

"Don't delay until bacterial infections and stress periods strike down your pigs! Be on guard *in advance.*

Take the best possible way to prevent losses: Start your pigs off on good feeds that contain effective levels of AUREOMYCIN Chlortetracycline. Feed AUREOMYCIN all the way to market. There's no better way to control infectious scours—get fastest growth—raise thrifty, uniform hogs. There's no better way to insure hog profits".

And there's no better way for YOU to keep HOG FEED SALES moving all through 1955. Write for our feeding recommendations.

Cyanamid Fine Chemicals

AMERICAN Cyanamid COMPANY

Fine Chemicals Division

30 Rockefeller Plaza New York 20, N. Y.

*Trade-Mark

AUREOMYCIN*

CHLORTETRACYCLINE

SHELLBUILDER

For consistent repeat business

Carefully processed from finest quality reef oyster shells.
Strongly packaged, uniform quality.

Naturally it's better

MELROSE BUILDING
HOUSTON, TEXAS

SHELLBUILDER COMPANY

Vernal, New Alfalfa Variety, Developed By Wisconsin Scientists

MADISON, WIS.—A new variety of alfalfa, named Vernal, has been developed by scientists at the Wisconsin agricultural experiment station in cooperation with U.S. Department of Agriculture scientists.

A report on this new variety was prepared for Alfalfa Research News by H. O. Graumann, research agronomist in the Bureau of Plant Industry, Soils and Agricultural Engineering. His report states:

"Vernal alfalfa is a bacterial wilt resistant and winter resistant variety which possesses a high forage yielding capacity. In Wisconsin and surrounding areas test plantings have shown this variety to persist with good stands under conditions where early stand failures were noted for wilt susceptible varieties such as Grimm and for wilt and winter susceptible sorts such as the common alfalfas. Even in those plantings in which other varieties also continued with good stands, Vernal has equaled or excelled them in forage yield. While additional testing is necessary to determine the region of adaptation of Vernal, its parentage indicates that this variety probably will have greatest value in the more northern sections of the U.S.

"Preliminary observations indicate that Vernal has fine stems and dark green color. However, comparative results are necessary to determine whether this variety excels others significantly for these characteristics.

"Farmers in central and southern regions of the U.S. may find Vernal to be less productive than the better adapted varieties presently recommended in these areas. This would be attributable to a peculiar but very characteristic growth response shown in the fall by most northern varieties possessing high levels of winter resistance. During the short days of fall and winter when conditions are sufficiently mild for growth, varieties such as Vernal, Grimm, Rhizoma, Ladak, Narragansett and Ranger exhibit a rosette habit of growth which tends to hug the ground, as contrasted with upright relatively vigorous growth of some of the more winter-tender southern varieties.

"Seed of Vernal alfalfa is not yet available. Foundation seed increases of this variety are under way in some of the western states, and seed for general farm plantings probably will not be available before the fall of 1956."

Continuous Alfalfa Helps Water Intake Capacity of Soil

LINCOLN, NEB.—Tests made at the Nebraska agricultural experiment station show that the rate at which water will enter the soil is kept at a higher level by continuous alfalfa than by other common rotations. The soils studied had been kept in the same rotations for 39 years.

After three hours of irrigation, the rate of water entry was 12.0 and 14.6 in. per hour in the continuous alfalfa plots for non-manured and manured soils, respectively.

The next highest rates were found on plots where potatoes were growing, following the plowing under of a 3-year-old stand of alfalfa. These rates were 6.4 and 9.2 in. per hour, respectively, for the non-manured and manured plots.

The lowest rate of water entry, only 0.2 in. per hour after three hours of irrigation, was found on a plot which had been in continuous corn, without application of manure. Where manure had been applied every year since 1942, the rate for a continuous corn plot was 2.7 in. per hour.

It's "NATURALLY" Tops

HIGH in Protein
HIGHER in Carotene
HIGHEST in the Estimation of Its Users

FIREBAUGH

Grease Treated

Dehydrated Alfalfa Meal

Reground Pellets
Pellets

NO DUST | TOP TEST BRAND | LOW FIBRE

Sacked or Bulk

Grown and Processed by

V. C. BRITTON CO.

Firebaugh, California

THINK! JUST ONE MACHINE THAT:

- SHELLS up to 500 BU./Hr. of machine picked corn.
- SEPARATES shelled corn from husks and cobs, with top shell out percentage.
- CLEANS the shelled corn of dirt, silks and chaff automatically and efficiently.
- REMOVES COBS, husks and dirt; blows them through 8" piping to an overhead bin or outside pile.

★ ★ ★

- CHEAPER. Just one entirely complete machine. No "Separators" or "Cleaners"—no "Cob Conveyors" to buy and install. Takes less space too.
- SAVES POWER. Just one motor does everything.
- SAVES UPKEEP. Less machinery means less upkeep. All moving parts mounted on just one through shaft. Only two bearings to lubricate.

INCREASE YOUR PROFITS

WITH THIS 4 OPERATION MACHINE

"The Most Profitable, Best Investment in Mill Equipment I Ever Made".

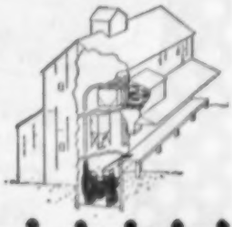
TRIUMPH Zip

COB BLOWING CORN SHELLER

shells, separates and air cleans the corn and removes cobs, husks, silk and dirt

●You'll take care of more customers in less time, eliminate long line-ups and delays, and make more money — quicker — with these newly improved, more durable, more accessible Triumph Zip Cob Blowing Corn Shellers. They shell even poorly picked corn full of husks, or high moisture corn — separate out the cobs and husks with minimum corn loss — air clean the shelled corn, and blow the cobs, husks and dirt through piping to an overhead bin or outside pile. Just one machine does everything. There are no screens, no cleaners or cob conveyors to buy and install. No major building changes. No high millwright costs. All moving parts are mounted on just one through shaft, and driven with just one motor. These new Triumph Zip Cob Blowing Corn Shellers, will give you years of profitable service. Don't delay. *Send the coupon today.*

THE C. O. BARTLETT & SNOW CO.
6249 HARVARD AVENUE • CLEVELAND 5, OHIO



Send FOR FULL DETAILS Today

THE C. O. BARTLETT & SNOW CO. 54-1
6249 Harvard Avenue, Cleveland 5, Ohio

Please send me catalog, price and delivery information on the newly improved, more durable, more accessible Triumph Zip Cob Blowing Corn Shellers.

I need capacity to handle about _____ bushels per hour.

Name _____

Address _____

_____

The Role of Dehydrated Alfalfa Meal In the Nutrition of Farm Animals

By Dr. T. W. Perry

Department of Animal Husbandry, Purdue University, Lafayette, Ind.

Introduction

Dehydrated alfalfa meal has become an integral part of the ration for many species of farm animals under a wide variety of typical conditions. For many years, dehydrated alfalfa has been incorporated into rations for one or more of its many known desirable qualities which include (1) stable and high level of carotene or precursor of vitamin A, (2) approximately 17 percent protein, (3) minerals, (4) B-vitamins, (5) bright green color, and (6) bulky characteristic accompanied by the aforementioned. However, recent research conducted at widely separated experiment stations indicates there are unidentified factors, or combinations of identified and unidentified factors, present in dehydrated alfalfa meal which contribute to the well-being of farm animals.

The purpose of this article is to review the reports of some of the more recent research which was designed to learn more concerning the role of dehydrated alfalfa meal in the nutrition of farm animals.

A. Cattle

Nebraska Research

Nebraska investigators (Baker et al., 1947, 1949, 1953) reported an advantage in replacing varying portions of the soybean oil meal with dehydrated alfalfa meal in the rations of steer calves and yearlings. In one trial, the cattle were fed 5 lb. ground ear corn per day for the first 56 days, and then ground shelled corn was substituted and gradually increased until they were eating 10 lb. Corn silage was fed ad lib. The animals in the control lot which received 1.5 lb. soybean meal grew at the rate of 1.88 lb. per day, whereas those receiving the same protein-equivalent in dehydrated alfalfa meal (3.43 lb.) instead of soybean meal grew 2.09 lb. per day. In a similar trial, control steers grew 1.89 lb. per day and when a protein-equivalent amount of soybean meal was replaced by 0.50 or 1.0 lb. alfalfa meal, steers grew 1.97 and 2.01 lb. per day, respectively.

The Nebraska workers full-fed corn silage and ground ear corn and various supplements designed to study the value of dehydrated alfalfa meal as a substitute for soybean meal for yearling steers averaging 676 lb. at the start. Steers receiving 1.50 lb. soybean oil meal per head daily gained 2.32 lb. per day. By adding and increasing dehydrated alfalfa levels on a protein-equivalent-replacement basis for soybean meal, gains were increased as follows: 2.00 lb. of a mixture of equal parts, by weight, soybean meal and dehydrated alfalfa meal, 2.52 lb. per day; 2.50 lb. of a mixture of one part soybean meal and four parts dehydrated alfalfa meal, by weight, 2.62 lb. per day; 3.00 pounds dehydrated alfalfa meal, 2.71 lb. per day. Three comparable lots of steers were fed 1.5 lb. daily of one of the last three supplements listed above, to which had been added sufficient urea to bring the nitrogen to that contained in 1.5 lb. soybean meal. The growth rate was: 1.50 lb. soybean meal, 2.32 lb. per day; 1.50 lb. equal parts soybean meal and dehydrated alfalfa meal plus 5% of a 262% urea feed, 2.60 lb.; 1.50 lb. of a mixture of one part soybean meal and four parts dehydrated alfalfa meal plus 8% urea, 2.61 lb.; 1.5 lb. dehydrated alfalfa meal plus 9.8% urea, 2.69 lb. per day. This work showed dehydrated alfalfa meal was capable of replacing soybean meal, pound for pound, when the protein level was adjusted.

Purdue Research

Purdue research indicated the nutritional value of dehydrated alfalfa meal in the ration of steers fed a low quality roughage such as ground corn cobs (Beeson, et al., 1949, 1950, 1952, 1953, 1954, and Perry et al., 1953). In one of a series of experiments to design a supplement for farm roughages, 16 lb. ground corn cobs was fed to Hereford calves with 3.5 lb. Purdue Cattle Supplement A per head daily. Steers on this ration gained 1.01 lb. per day. By substituting either 1 lb. or 2 lb. of dehydrated alfalfa meal for 1 or 2 lb. ground corn cobs, gains were increased to 1.14 and 1.28 lb., respectively, per steer daily. In other words, replacing 2 lb. ground corn cobs with 2 lb. dehydrated alfalfa meal increased the daily gain 0.27 lb. In another trial, the incorporation of 2 lb. dehydrated alfalfa meal into the daily supplemental allowance on a protein-equivalent-replacement basis for soybean meal resulted in an increase in average daily gain from 1.28 lb. to 1.42 lb. These two trials indicated the growth-promoting effect of dehydrated alfalfa meal when small amounts are added on either a roughage-replacement or on a protein-equivalent-replacement basis.

In a subsequent Purdue trial, one-half pound dehydrated alfalfa meal was incorporated into the Supplement A formula to replace the oat hulls and ground grain screenings on which molasses had been dried, formerly. Steers receiving ground corn cobs and 3.5 lb. of the supplement containing no alfalfe meal gained 1.33 lb. per day whereas those receiving 3.5 lb. of the supplement containing one-half pound dehydrated alfalfa meal gained 1.61 lb. per day.

Ohio Research

Similarly, Ohio research has revealed there are growth stimulating factors for beef cattle in dehydrated alfalfa meal (Burroughs et al., 1948, 1950, and Klosterman et al., 1953). On a corn and cob meal, hay and soybean meal fattening ration, 472 lb. calves gained at the rate of 1.81 lb. per day. The replacement of ⅔ or ⅓ of the soybean meal with an equivalent amount of dehydrated alfalfa meal resulted in daily gains of 1.90 and 1.93 lb., respectively. Yearling steers were fed a small amount of alfalfa ash in addition to their fattening ration. The addition of 2.8 oz. of alfalfa ash resulted in an increase in daily gain from 1.75 lb. to 2.19 lb.

The Ohio researchers set up a series of digestion trials to determine the effect of alfalfa and fractions of alfalfa on digestion. Corn cob digestion was improved progressively with four respective additions of alfalfa. The nature of this unknown nutrient(s) contained in alfalfa would appear to be partially or totally soluble in water, and in part or totally associated with the inorganic constituents contained in alfalfa. A water extract of dehydrated alfalfa meal or the ash of alfalfa meal fed at the rate equivalent to 4 lb. meal daily per steer improved corn cob digestion materially.

B. Poultry

The published results of much research substantiate the beneficial effects of small amounts of dehydrated alfalfa meal in the poultry diet.

1. Increased hatchability

Dehydrated alfalfa meal contains a factor(s) essential for hatchability. Cravens et al. (1942) reported the marked improvement in hatchability of eggs from pullets whose ration of grains, grain by-products, minerals, and fish oils has been supplemented with from 0.5 to 10% dehydrated alfalfa meal. Hatchability was improved, but to a lesser degree, by the addition of dried cereal grass. The optimum level of dehydrated alfalfa meal in the laying ration appeared to be about 2%. Hunt et al. (1939) observed, as a sidelight to a study to determine the riboflavin requirements of the chicken, that the hatchability of eggs from hens receiving 5% each of alfalfa meal and dried skimmilk was consistently higher than that of the eggs from hens receiving 10%

THE NEUMOND COMPANY • ST. LOUIS

Pioneers in Marketing Alfalfa Products . . . We Offer Broad Selection from Mississippi Valley and the Middle West

Alfalfa Specialists

DEHYDRATED • SUNCURED

Merchants Exchange • St. Louis, Mo.

BEN M. SCHULEIN • BEN M. SCHULEIN, Jr.

TWX Protein Dept. KC-20 Other Commodities KC-125

PHONES Victor 4384 Thru Victor 4390

POLKA-DOT SPECIALS

BOARD OF TRADE BLDG. "The Polka Dot Folks" KANSAS CITY 5, MISSOURI

BEST WISHES TO THE AMERICAN DEHYDRATORS ASSOCIATION ON THE OCCASION OF THEIR 1955 CONVENTION.

WE ARE SPECIALIZING IN DEHYDRATED AND SUN-CURED ALFALFA PRODUCTS. WHEN YOU ARE SELLING OR HAVE BUYING INTEREST PUT US TO WORK FOR YOU.

GENE SELDERS BOB KIVETT RALPH WALTON

ALFALFA MEAL • LINSEED MEAL • COTTONSEED MEAL • ROLLED OATS • PULVERIZED OATS • REGROUND OAT FEED • MOLASSES BRAN • SHORTS • SOYBEAN MEAL • FISH MEAL • DISTILLERS' GRAINS • DISTILLERS' SOLUBLES • BREWERS' GRAINS • CRIMPED OATS • CRIMPED BARLEY • HOMINY FEED • SCREENINGS

All Feed Ingredients

Eugene L. SELDERS CO.

of dried skimmilk, both rations having about the same riboflavin content.

2. Increased fertility

Increased fertility, increased folic acid and citrovorum content of the egg yolk and decreased blood clotting time of day-old chicks was the result of feeding alfalfa meal in research conducted by Jacobs et al. (1953). Five percent dehydrated alfalfa meal plus 22.7 mcg. of vitamin B_{12} per pound of feed was more effective than either one alone, when added to a corn-soy basal ration which had been fortified with the usual vitamins—except B_{12}.

3. Growth stimulation

The incorporation of up to 5% of dehydrated alfalfa meal in the growing ration for chicks results in stimulated growth. The University of Illinois has reported chick-growth stimulating properties attributable to dehydrated alfalfa meal (Scott et al., 1953; Hansen et al., 1953; and Fisher and Scott, 1954). After a series of trials had demonstrated the growth promoting properties of 5% dehydrated alfalfa meal in the chick ration, an attempt was made to identify a single fraction that might be responsible for the stimulation. The addition of cellulose, alfalfa ash, critical amino acids and gum arabic (gum arabic contains glucuronic acid postulated to be a growth factor) was tested. The inorganic constituents of alfalfa exerted no influence on chick growth. This was likewise true for the critical amino acids calculated to be present in 5% alfalfa. The basal diet did not appear to be improved by uronic acid. Five percent cellulose did produce a significant growth response, although to a lesser degree than alfalfa meal.

The comparative growth stimulating properties of alfalfa juice, casein, aureomycin and various combinations were studied by Hill et al. (1953). Either 5% alfalfa juice or aureomycin alone, when added to the basal diet, stimulated the growth of New Hampshire chicks. However, the chick growth response to aureomycin in the presence of alfalfa juice was but one-half that it was in the absence of alfalfa juice, indicating at least a part of the growth-stimulating properties of alfalfa juice and aureomycin are similar.

Arizona workers (Vavich et al, 1953) studied the effect of level of protein on the growth-stimulating properties of dehydrated alfalfa meal. One to three-day old New Hampshire chicks were fed a diet of wheat, white corn, gelatin, minerals, vitamins and either 10 or 18% of casein. On both the 10% and 18% levels of casein, there was significant growth stimulation by the incorporation of 3% dehydrated alfalfa meal. In one trial, 1% cottonseed meal or 0.6% sardine meal was added to the basal diet for the protein added by 3% alfalfa meal in the treated lot. The chicks on 10% casein receiving alfalfa or sardine meal grew at a faster rate than those receiving the basal diet plus cottonseed meal, indicating a growth factor is found in sardine meal as well as alfalfa meal.

4. Turkey Poults

Turkey poults utilize up to 35 to 40% of dehydrated alfalfa meal in their mash as a pound for pound replacement of grain, according to research conducted at the Utah Agricultural Experiment Station (Alder, 1946; 1948). Young turkeys were started on treatment at eight weeks of age and were fed from 10 to 50% of their mash as dehydrated alfalfa meal during the following 19 weeks. As the level of alfalfa meal in the mash increased, the level of grain decreased. In addition, a grain mixture of wheat 60, barley 20, and oats 20 was available in another trough. Level of alfalfa meal had no effect on mortality. Levels up to and including 40% alfalfa in the mash and no deleterious effect on growth rate, whereas those being fed 50% alfalfa meal in the ration grew more slowly.

5. Depressing Effect of Higher Levels

Even though a small amount of dehydrated alfalfa meal (from 3 to 5% of the total ration) is advantageous in the diet of poultry in terms of increased growth rate, increased hatchability and fertility, higher levels exert an apparent growth depressing effect. Several workers have observed this effect when levels higher than 5% of alfalfa meal were included in broiler rations (Ayala and Johnson, 1951; Cooney et al., 1948; Draper, 1948; German and Couch, 1950; Heywang, 1950; Kodras et al., 1951a, 1951b; Lepkovsky et al., 1950; and Peterson, 1950a, 1950b). Apparently, different samples vary in the quantity of this factor contained since in research reported by German and Couch (1950) one sample of alfalfa meal fed at a level of 10% produced no growth depression whereas another sample at the same level did.

In considering the nature of the growth-depressing effect observed when high levels of dehydrated alfalfa meal are fed, it can be said that: (a) incorporation of 1% cholesterol counteracted the effect (Kodras et al., 1951a) (b) leaves are richer in the depressant than are the stems (Kodras et al., 1951b) (c) the effect is not related to the fiber (Lepkovsky, et al., 1950) (d) the substance is hot-water soluble (Lepkovsky) (e) it is soluble in 50 and 80% ethanol (Peterson, 1950a).

Peterson (1950b) was able to produce the growth-depressing effect by the addition of saponin to a good basal ration, indicating the saponin contained in alfalfa meal may be the active ingredient responsible for growth depression when large amounts are fed to chicks. Heywang and Bird (1954) reported confirming evidence that saponin was responsible for at least a part of the growth-depressing effects of high levels of dehydrated alfalfa meal in chick rations. Diets containing 0.05, 0.10, or 0.15% of saponin had no growth depressing effect whereas diets containing 0.20 or 0.40% exerted the effects of decreased growth, decreased diet consumption and decreased feed utilization. Although the saponin content of different samples of alfalfa vary, the alfalfa from which this saponin was extracted contained 0.8% saponin. Thus, the 0.2% growth-depressant level of saponin in the diet was equivalent to that which would be contributed by 25% of this particular alfalfa.

C. Swine

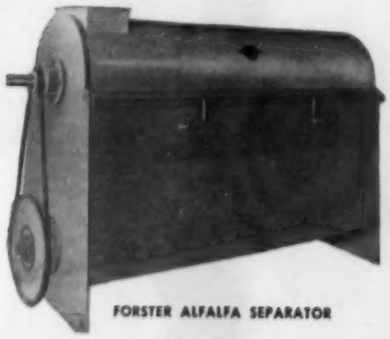
1. Beneficial in Drylot Gestation Rations

Dehydrated alfalfa meal has been assigned an essential role in the nutrition of pregnant sows in drylot. A vast amount of supporting evidence has been accumulated at both the University of Illinois and Purdue University experiment stations. Fairbanks et al. (1945), and Krider and Carroll (1945) reported that gilts fed a 15% protein drylot ration containing yellow corn, soybean meal, tankage, fish meal and minerals weaned 13% of their pigs farrowed whereas

For BLENDING and BULK LOADING

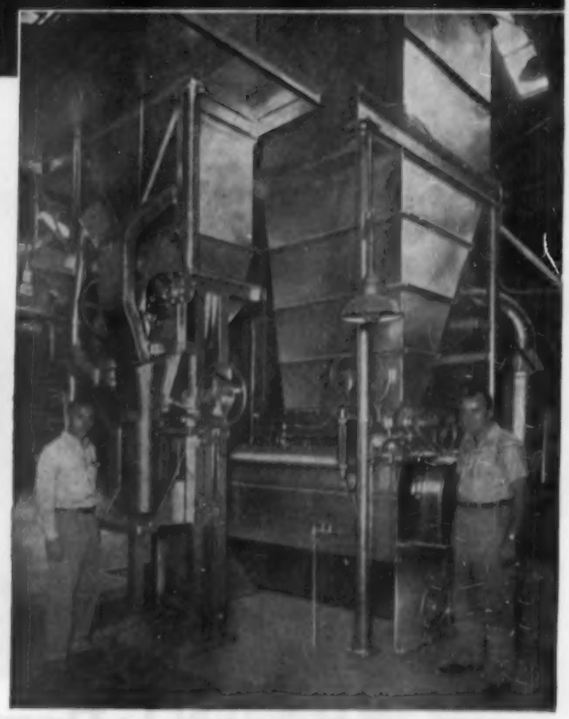
FORSTER ENGINEERING AND FORSTER EQUIPMENT

Forster Engineering and Forster Equipment help any dehydrator produce a better product. Forster machines help control cost and build sales through quality production.

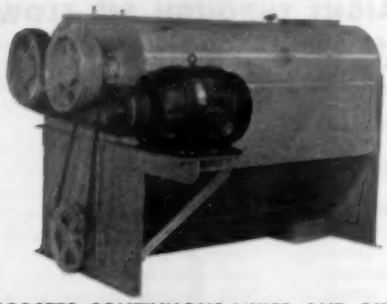


FORSTER ALFALFA SEPARATOR

The Forster Alfalfa Separator is in demand wherever the protein of the finished product is controlled by separating out the very high quality meal or by removing the low protein, high fiber stem meal. Where cold storage is necessary, this machine will pay its way every month by reducing field run bulk meal to high carotene, high protein leaf meal.

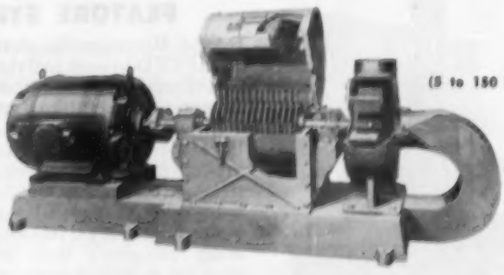


Forster Engineering throughout in this Modern Blending Plant for Bert & Wetta Sales, Inc. (Wichita plant)



FORSTER CONTINUOUS MIXER AND OILER

Blend and add oil or grease to your alfalfa in one operation with the new Forster continuous blender and dresser. Controls moisture content, blends as it dresses and applies oil and grease as it dresses. Suppress dust the modern way. Pays for itself in six months.



(5 to 150 H.P.)

FORSTER HAMMER MILL is known the world over for efficient operation and long life. Built to do rugged jobs.

Write for complete details of Forster Machines and Engineering Service

The FORSTER MANUFACTURING COMPANY

DEPARTMENT F
1411 S. McLEAN BLVD.
WICHITA 12, KANSAS

gilts whose ration contained 10% dehydrated alfalfa meal, in addition to the ration listed above, weaned 83% of their pigs farrowed. Krider et al. (1946) observed a beneficial effect from the incorporation of 12% alfalfa meal from weaning through subsequent gestation and lactation. Gilts fed 12% alfalfa meal, in addition to the basal ration, required 1.0 service per conception (2.0 for basal group) and farrowed 60% of pigs strong (39% in basal). Terrill (1951) concluded there exists a "survival factor" in high quality sun-cured and dehydrated alfalfa meal.

Vestal et al. (1947), in the first of a series of experiments designed to determine the cause of poor farrowing and weaning performance of many gilts and sows, found that the incorporation of 15% dehydrated alfalfa meal in a corn-soy-mineral drylot ration resulted in the weaning of 1.5 pigs more per litter farrowed. The results from the second experiment (Vestal et al., 1948) were even more marked. The gilts which had received 15% dehydrated alfalfa meal in drylot outperformed the gilts which received the basal ration containing no dehydrated alfalfa meal, as follows: birthweight—basal, 2.24 lb.; alfalfa, 2.48 lb.; strong pigs at birth—basal, 58.8%; alfalfa, 80.0%; pigs died first 3 days—basal, 34%; alfalfa, 6.4%; pigs weaned per gilt farrowed—basal, 3.0; alfalfa, 7.5; percent of farrowed pigs weaned—basal, 40.2%; alfalfa, 80.0%. Almost as striking results were obtained during the third trial by these same investigators (Vestal et al., 1949).

2. Dehydrated Alfalfa Meal in Swine Fattening Rations

It has been a common practice to include dehydrated alfalfa meal in the rations of fattening hogs in drylot. Ten percent of dehydrated alfalfa meal in the free choice protein supplement is the usual level fed. When it is considered a pig eats an average of one-sixth of its diet as protein supplement, one can calculate the average intake of alfalfa as 1.67% of the total ration.

Nevada workers (McCormick and Kidwell, 1953) reported a series of experiments designed to determine the ability of swine to use much higher levels of alfalfa than are commonly recommended. In one trial, grain mixtures containing 10, 30 or 60% alfalfa were fed along with a free-choice protein supplement containing 20% each of fishmeal and meat scraps and 30% each of cottonseed meal and alfalfa. The pigs gained 1.16, 1.12 and 0.91 lb. per day, respectively, when the three indicated levels of alfalfa were incorporated into the grain mixture.

In a subsequent and similar trial, hogs grew from weaning to market weight at the rate of 1.7, 1.6 and 1.3 lb. per day, respectively, when their grain mixture contained 10, 30 or 50% alfalfa. It was in this trial that pigs receiving 30% alfalfa substituted one pound of alfalfa for one pound of grain in terms of feed required per 100 lb. gain.

Pelleting of the high-roughage diets improved utilization of the feed in a trial designed to compare pelleted vs. non-pelleted. A grain ration containing 50% alfalfa was fed either pelleted or in a mash along with a free choice protein supplement. Pellet-fed animals gained 1.5 lb. per day from weaning to market weight whereas mash-fed animals gained 1.2 lb. per day.

D. Sheep

1. Gestation Rations

Purdue research has indicated beneficial effects from including alfalfa in the gestation rations of ewes. Shrewsbury et al. (1942) fed a basal ration of yellow corn, 0.65 lb.; corn silage, 1.90 lb.; and oat straw, 1.22 lb. Treated ewes received alfalfa hay in place of the oat straw. Ewes receiving the alfalfa hay gained 17.2 lb. during pregnancy and clipped 10.6 lb. wool as compared to an average gestation gain of 3.3 lb. and a wool clip of 8.5 lb. for ewes receiving the basal ration containing no alfalfa. The feeding of 0.13 lb. alfalfa ash per ewe daily had no effect on their performance. The following year's work (Shrewsbury et al., 1943) indicated the water-soluble fraction of alfalfa contained definite nutritive value for breeding ewes whereas alfalfa fat solubles were of little value.

In later research (Stitt et al., 1954), one of a series of three trials designed to study the nutritional requirements of pregnant ewes in drylot showed that ewes which received 1.0 lb. dehydrated alfalfa meal daily in addition to the basal ration suffered 10 lb. less weight (16 lb. vs. 26 lb.), clipped 2 lb. more wool (13.5 lb. vs. 11.5) and gave birth to lambs weighing 4% more (10.4 lb. vs. 10.0) than ewes receiving only the basal ration.

2. Growing and Fattening Lambs

Esplin et al. (1951) point out the superiority of dehydrated alfalfa meal over chopped alfalfa hay in rations of fattening lambs. In one of a series of trials, dehydrated alfalfa —either as the meal or in pellet form —was compared with chopped alfalfa hay when fed with grain in a fattening ration for lambs. In five trials, lambs receiving from ½ lb. to 1½ lb. dehydrated alfalfa meal gained from .02 to .06 lb. more per day than lambs getting chopped alfalfa hay. In two other trials, dehydrated alfalfa meal was fed with grain, corn silage and chopped hay whereas comparable lots received a similar ration except that dehydrated alfalfa meal was replaced by increased levels of chopped hay. Under these conditions, lambs receiving 1 lb. dehydrated alfalfa meal grew 0.06 and 0.05 lb. more per day than the controls receiving no dehydrated alfalfa meal.

Swift et al. (1951) attempted to show what alfalfa contained which was of benefit in the nutrition of sheep. A corn cob mix containing 40.4% ground corn cobs, skimmilk

Unlimited Conveying Capacity
RIGHT FOR THE TOUGH JOB!
SIZES AND MODELS RANGING FROM 25 TO 200 H. P.
WRITE TODAY for your free copy of the new Bryant Brochure which describes fully this modern outstanding Mill.
BRYANT DOUBLE DUTY HAMMERMILLS
FEATURE STRAIGHT THROUGH AIR FLOW
Bryant Hammermills alone are AIR-ADAPTED to each individual application through the use of the correct size fan and proper H.P. to insure adequate conveying power for your installation. Bryant Hammermills alone offer unlimited conveying capacity both vertical and horizontal.
Positive Air Control directs an adequate supply of air (essential for maximum capacity) into the grinding chamber as well as under the screen . . . the supply of air under the screen is extremely important as it is responsible for carrying the ground material away from the mill and into high velocity air stream that conveys it to dust collector.
You can give your customers faster service and more personal attention when your Bryant Hammermill is equipped with a Bryant Simplex Screen Changer.
Your mill operator can select the desired screen size instantly, without stopping the mill . . . without leaving the work floor and with a minimum of effort. A simple push or pull on one of three control rods changes to a fine, medium or coarse screen . . . the Bryant Mill changes screens to assure your customer of getting the desired granulation.
QUALITY FEED MILL MACHINERY SINCE 1911
Bryant
ENGINEERING COMPANY
Port Huron, Michigan
Corn Shellers . . . Crusher Feeders . . . Corn Cutters and Graders . . . Permanent Magnets

MOVING?

If you are moving, tell us about it, won't you? Your weekly copy of Feedstuffs will not follow you unless we have your new address right away. Make sure you don't miss a single important issue . . . and help us make the correction as quickly as possible by giving us your old address too.

FEEDSTUFFS
P. O. Box 67, Minneapolis 1, Minn.

powder, cerelose and minerals was fed in a series of digestion and calorimetric experiments with sheep. The apparent digestibility of the crude fiber was significantly increased by the addition of 28 grams of alfalfa ash (equivalent to 0.73 lb. alfalfa) per lamb daily.

Vitamin Content of Dehydrated Alfalfa Meal

Vitamin	Amount
Thiamine	8 mcm/gm
Riboflavin	16 mcm/gm
Pantothenic acid	33.7 mcm/gm
Niacin	40.4 mcm/gm
Folic acid	11.3 mcm/gm
Tocopherols	174 mg/lb.
Choline	475 mg/lb.
Carotene	100,000 I.U. Vit. A/lb.

Mineral Content of Dehydrated Alfalfa Meal

Constituent	Average % (dry basis)
Ash	10.8
K	2.60
Ca	1.59
P	0.310
Mg	0.310
Na	0.167
Fe	0.089
Mn	0.0059
B	0.0047
Cu	0.0037

The Essential Amino Acid Content of Alfalfa Meal

Amino Acid	Per cent (dry basis)
Histidine	0.22
Arginine	0.56
Lysine	0.89
Leucine	1.19
Isoleucine	0.65
Valine	0.80
Methionine	0.03
Threonine	0.60
Tryptophane	0.26
Phenylalanine	0.74

BIBLIOGRAPHY

Alder, Byron, 1946 — Economical turkey production in Utah; Utah Agr. Exp. Station Mimeograph Series No. 323.

Alder, Byron, 1948—Alfalfa meal as a part of a turkey growing mash; Poultry Sci., 27:661 (an abstract).

Ayala, E., and Johnson, E. L., 1951—Vitamin B_{12} and growth inhibiting properties of the dried juice of alfalfa; Poul. Sci., 30:893.

Baker, Guy N., 1949—Comparison of soybean oil meal pellets, cut alfalfa hay, dehydrated alfalfa meal pellets and cured sugar beet tops as a protein supplement for corn silage and ground yellow corn for wintering and fattening steer calves; Nebraska Agric. Exp. Sta., North Platte Sub-Station Progress Report 54.

Baker, Guy N., and Jackson, Josef A., 1953—Feeding protein supplements of different levels and different mixtures of soybean meal and dehydrated alfalfa meal to yearling Hereford steers of different weights; Nebraska Agric. Exp. Sta., North Platte Exp. Sta., Progress Report 68.

Baker, Marvel L., Arthaud, V. H., and Ruby, Ellis, 1947—Dehydrated alfalfa and urea as supplementary protein for fattening cattle; Nebraska Agr. Exp. Sta., Cattle Progress Report 199.

Beeson, W. M., 1949—Ground corn cobs for growing steers; Purdue Univ. Agric. Exp. Sta. Mimeo AH 39.

Beeson, W. M., 1954—Improving livestock rations with alfalfa meal; Feedstuffs 26 (No. 5): 17a.

Beeson, W. M., and Perry, T. W., 1950—Wintering cattle on corn cobs; Purdue Univ. Agr. Exp. Sta. Mimeo AH 48.

Beeson, W. M., and Perry, T. W., 1952—Balancing the nutritional deficiencies of roughages for beef steers; J. Animal Science, 11:501.

Beeson, W. M., and Perry, T. W., 1952—Improving the formula of supplement A with alfalfa meal; Purdue Univ. Agr. Sta. Mimeo AH 101.

Burroughs, Wise, Geriaugh, Paul, and Bethke, R. M., 1948—Influence of alfalfa ash and water extract of alfalfa upon roughage digestion in cattle; J. Animal Sci., 7:522 (an abstract).

Burroughs, Wise, Geriaugh, Paul, and Bethke, R. M., 1950—The influence of alfalfa hay and fractions of alfalfa hay upon digestion of ground corncobs; J. Animal Sci., 9:207.

Catron, D. V., Culbertson, C. C., and Shearer, P. S., 1948—Studies on young pig mortality; J. Animal Sci., 7:522 (an abstract).

Cooney, W. T., Butts, J. S., and Bacon, L. E., 1948—Alfalfa meal in chick rations; Poul. Sci., 27:828.

Cravens, W. W., Holmes, C. E., Halpin, J. G. and Elvehjem, C. A., 1942—The effect of alfalfa leaf meal and dried cereal grass on egg production and hatchability; Poul. Sci., 21:301.

De Pape, J. G., Burkitt, W. H., and Flower, A. E., 1953 — Dehydrated alfalfa and antibiotic supplements in gestation-lactation rations for swine; J. Animal Sci., 12:77.

Draper, C. I., 1948—A comparison of suncured and dehydrated alfalfa meal in the diet of the chick; Poul. Sci., 27:659.

Ellis, N. R., and Zeller, J. H., 1938—The relative value of different levels of alfalfa meal in the ration of fall pigs; Proc. Amer. Soc. Animal Prod., page 115.

Espiña, A. Lamar, Connell, W. E., and Wheeler, G. S., 1951—Dehydrated alfalfa vs. alfalfa hay for fattening lambs; U. Colorado A.E.S. Animal Husb. Progress Report, February, 1951.

Fairbanks, B. W., Krider, J. L., and Carroll, W. E., 1945—Effect of diet on gestation-lactation performance of sows; J. Animal Sci., 4:416.

Fisher, H., Scott, H. M., 1954—Further studies on the alfalfa factor and its relation to the liver and whey factors; J. Nutrition, 52:13.

German, H. L., and Couch, J. R., 1950—The effect of feeding varying levels of dehydrated alfalfa leaf meal on the growth of chicks and poults; Poul. Sci., 29:841.

Hansen, R. G., Scott, H. M., Larson, B. L., Nelson, T. S., and Krichevsky, P., 1953—Growth stimulation and growth inhibition of chicks fed forage and forage juice concentrate; J. Nutrition, 49:483.

Heywang, B. W., 1950—High levels of alfalfa meal in diets for chickens; Poul. Sci., 29:804.

Heywang, Burt W., and Bird, H. R., 1954—The effect of alfalfa saponin on the growth, diet consumption and efficiency of diet utilization of chicks; Poul. Sci., 33:239.

Hill, C. L., Borchers, R. L., Ackerson, C. W., and Musselman, F. E., 1953—Studies on chick growth stimulation by alfalfa juice, casein and Aureomycin; Poul. Sci., 32:775.

Hunt, C. H., Winter, A. R., Bethke, R. H., 1939—Further studies on the riboflavin requirements of the chicken; Poul. Sci., 18:330.

Jacobs, R. L., Elam, J. F., Quisenberry, J. H., and Couch, J. R., 1956—Dehydrated alfalfa leaf meal as a source of vitamins and unidentified factors for the mature fowl; Poul. Sci., 32:812.

Kemmerer, A. R., 1954 — Unidentified growth factors in dehydrated alfalfa; Feedstuffs 26 (No. 5): 32.

Klosterman, Earle W., Kunkle, L. E., Bentley, Orville G., and Burroughs, Wise, 1953—Supplements to poor quality hay for fattening cattle; Ohio Agr. Exp. Sta. Res. Bul. 733.

Kodras, R., Cooney, W. T., and Butts, J. S., 1951 a—Chick growth depressing factor in suncured and dehydrated alfalfa meals; Poul. Sci., 30:256.

Kodras, R., Cooney, W. T., and Butts, J. S., 1951 b—Effects of alfalfa meal, alfalfa leaves, alfalfa stems and fresh alfalfa on chick growth; Poul. Sci., 30:786.

Krider, J. L., and Carroll, W. E., 1945—Effect of diet on gestation and lactation performance; J. Animal Sci., 3:447.

Krider, J. L., Curtin, L. V., Wallace, H. D., and Terrill, S. W., 1948—Alfalfa meal, distillers' solubles, meat scraps and sardine fish solubles compared as supplements for sows fed in drylot; Illinois Ext. Serv. Mimeo AS 1b.

Krider, J. L., Fairbanks, B. W., and Carroll, W. E., 1946—Alfalfa meal and distillers' solubles for brood sows; Illinois Swine Growers Day Report, 1946.

Lepkovsky, S., Schaeleff, W., Peterson, D., and Perry, R., 1950—Alfalfa inhibitor in chick rations; Poul. Sci., 29:208.

McCormick, John A., and Kidwell, James F., 1953—Experiments in feeding hogs alfalfa in Nevada; Nev. Agr. Exp. Sta. Cir. 2.

Perry, T. W., Beeson, W. M., and Mohler, M. T., 1953—Testing modifications of Purdue cattle Supplement A; Purdue Univ. Agric. Exp. Sta. Mimeo A.H. 102.

Peterson, D. W., 1950—Some properties of a factor in alfalfa; J. Biol. Chem., 183: 647.

Peterson, D. W., 1950 b—Effect of sterols on the growth of chicks fed high alfalfa diets or a diet containing Quillaja Saponin; J. Nutrition, 42:497.

Sampson, F. R., and Musselman, F. E., 1936—The effect of various levels of alfalfa meal upon the development of body organs of cockerels; Poul. Sci., 15:304.

Scott, H. M., Fisher, H., and Snyder, J. M., 1953—Alfalfa meal as a source of unidentified growth factors; Poul. Sci., 32:555.

Shrewsbury, C. L., Andrews, F. N., Harper, C., and Zeile, M. R., 1943—The value of alfalfa and certain of its fractions in the nutrition of breeding ewes.; J. Animal Sci., 2:209.

Shrewsbury, C. L., Harper, Claude, and Andrews, F. N., 1948—Nutritive requirements of breeding ewes for maintenance, lactation and growth; J. Animal Sci., 5:47.

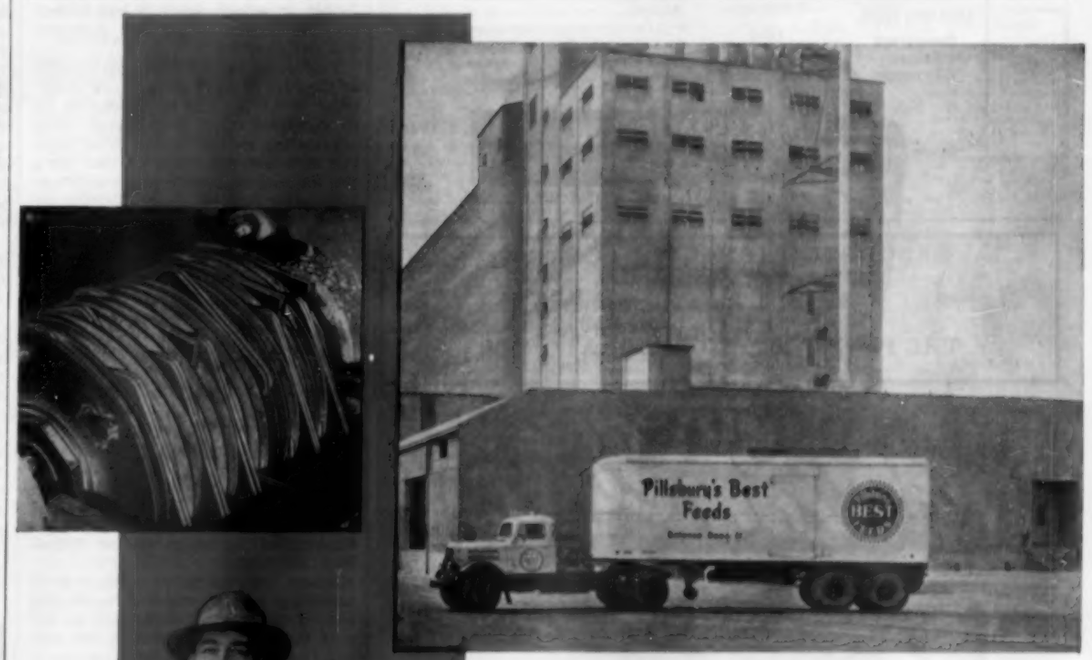
Shrewsbury, C. L., Harper, Claude, Andrews, F. N., and Zeile, M. R., 1942—The limitations of oat straw as a roughage for maintenance, lactation and growth in sheep; J. Animal Sci., 1:126.

Stitt, W. A., Perry, T. W., and Beeson, W. M., 1954—Supplementation of farm roughages for pregnant ewes in dry lot; J. Animal Sci., 13:234.

Swift, R. W., Cowan, R. L., Barrow, G. P., Maddy, K. H., and Grose, E. C., 1951—The effect of alfalfa ash upon roughage digestion in sheep; J. Animal Sci., 10:434.

Terrill, S. W., 1951—Practical aspects of recent gestation-lactation experiments; Ill. Ext. Service Mimeo AS 212.

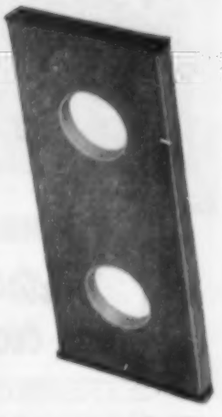
Totusek, Robert, Hornback, E. C., Perry, T. W., and Beeson, W. M., 1953—Corn cobs



for QUALITY GRANULATION...450 tons a day

Pillsbury uses **PACAL** Hard Faced **HAMMERS**

"Pacal Hard Faced Hammers give us the *quality granulation* our poultry and animal feed customers want", says Charles F. Wilson, superintendent of the East Los Angeles plant of Pillsbury Mills, Inc. "We use Pacal Hard Faced Hammers an average of four times as long as other hammers . . . some even longer. We consider the extra life as a bonus."



PACAL

hard faced hammers and hammer clusters* will run 3 to 4 times longer in your hammermill!

*U.S. PAT. NO. 2,607,550

write department HC-15

PAPER-CALMENSON & COMPANY

County Road B and Walnut St., Adjoining Highway 36, St. Paul 8, Minn.
Phone NEstor 9456

whatever your *Mixing* problem, a **PEERLESS MIXER** does the job

MORE Efficiently... MORE Economically!

Mixes Anything!

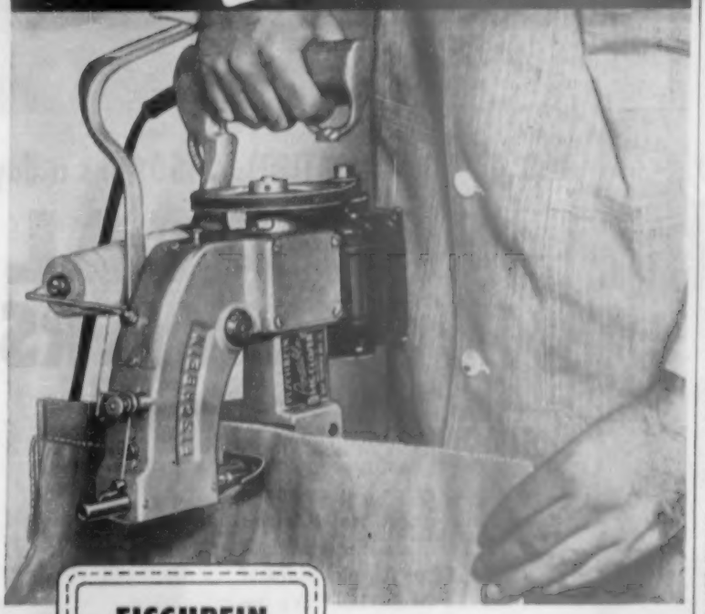
Powders
Paint Pigments
Livestock Feeds
Phonograph Record Compounds
Insecticides
Sweeping Compounds
Flour
Automobile Undercoating

Here's the most adaptable mixer ever built!
Specially-designed beating arms speed mixing operations. The agitators or flights (designed after checking several thousand mixing operations) beat, fold, overlap and agitate each particle thoroughly. All-Welded Steel Construction for extra strength . . . anti-friction bearings for extra smooth operation. Consult our Engineering Department for your specific requirements . . . without obligation.

The ESSMUELLER Company
Engineers • Manufacturers
1230 S. 8TH ST. ST. LOUIS 4, MO.

LABORATORY QUALITY CONTROL
Referee Service
Feeds, ingredients, tallow stability, alfalfa, gossypol, nitrogen solubility
THE POPE TESTING LABORATORIES
BOX 903 DALLAS 21, TEXAS

FOR *FAST, SECURE, LOW COST* BAG CLOSING



FISCHBEIN *Portable* BAG CLOSER

- A *truly* portable bag closer . . . Weighs only 10½ pounds.
- Requires no installation . . . plug into any outlet.
- Handles textile and paper bags.
- Simple to operate and maintain.
- Lowest priced bag closer on the market.

FOR DETAILS, MAIL THIS COUPON NOW

DAVE FISCHBEIN CO. Dept. B
38 Glenwood Avenue North
Minneapolis, Minnesota

Name..... Firm Name.....
Address.....
City..... State.....

for wintering beef cows; Purdue Univ. Agr. Exp. Sta. Mimeo A.H. 94.
Vavich, M. G., Wertz, Anne, and Kemmerer, A. R., 1953—Growth-stimulating factors in alfalfa for chicks; Poul. Sci., 32:433.
Vestal, C. M., Beeson, W. M., Andrews, F. N., Hutchings, L. M., and Doyle, L. P., 1947—Death losses in newborn pigs; Purdue Univ. Ag. Exp. Sta. Mimeo 27.
Vestal, C. M., Beeson, W. M., Andrews, F. N., Hutchings, L. M., and Doyle, L. P., 1948—Death losses in newborn pigs II; Purdue Univ. Agr. Exp. Sta. Mimeo 34.
Vestal, C. M., Beeson, W. M., Andrews, F. N., Hutchings, L. M., and Doyle, L. P., 1949—Death losses in newborn pigs III; Purdue Univ. Agr. Exp. Sta. Mimeo 41.

Insecticide Residue In Dehydrated Alfalfa Found to Be Small

MANHATTAN, KANSAS — Residues of at least three of the newer insecticides are not likely to give trouble in dehydrated alfalfa, according to a study by Paul A. Dahm of the Kansas agricultural experiment station.

In measuring the persistence of aldrin, chlordane, and toxaphene, he found that residues were almost negligible on alfalfa after it had undergone field weathering and commercial dehydration.

For these tests aldrin was applied at the rate of 0.125 lb. per acre, chlordane at 1.0 lb., and toxaphene at 1.5 lb. Analyses made immediately after application showed aldrin to be present in a concentration of two parts per million, chlordane at 10, and toxaphene at 30.

Eighteen days after applying the chemicals, and just before dehydration, the hay analyzed 0.1 part per million of aldrin, 2 of chlordane and 6 of toxaphene.

Analysis of the dehydrated alfalfa showed concentrations of 0.1, 1 and 5 parts per million, respectively, for aldrin, chlordane and toxaphene.

Alfalfa Called Nation's Dominant Forage Crop

Forage crops furnish approximately half the total livestock feed used in the U.S., according to the Bureau of Agricultural and Industrial Chemistry.

About two thirds is consumed as pasturage and one third as harvested hay. Total production of hay in recent years has amounted to 100 million tons annually (cured weight), including 40 million tons of alfalfa.

Alfalfa is the preeminent forage crop because of its high nutritional value and beneficial role in soil conservation and crop rotation. Present methods of field-curing and handling alfalfa result in a loss of nutrients estimated at 20 to 25%. As a basis for methods of reducing this loss, equivalent to 8 to 10 million tons of cured alfalfa, more knowledge is needed of the composition of the plant and the changes its components undergo during processing and storage under various conditions, the bureau report adds.

Alfalfa Costs Low

KANSAS CITY — Cost accounts have indicated some interesting comparisons between alfalfa and other crops when expressed as the cost to produce 100 lb. of TDN (total digestible nutrients), according to the Alfalfa Research Council of the American Dehydrators Assn. They are: oats (50 bu. per acre) $2.07; corn (50 bu. per acre) $1.77; alfalfa hay (3 tons per acre) $1.35, and legume pasture (because cattle or sheep do the harvesting, eliminating the cost of man labor and machinery) 60¢.

ALFALFA NEEDS POTASH

KANSAS CITY—When alfalfa and grasses are grown together as a mixture, the grasses tend to "steal" potash from the alfalfa. This is because of their greater ability to remove potash from the soil. Potash fertilization is especially important under such conditions, according to the Research Council of the American Dehydrators Assn.

New Variety of Alfalfa Developed

A new variety of alfalfa, Lahontan, has been released jointly by the U.S. Department of Agriculture and the California and Nevada Agricultural Experiment Stations. Lahontan is a purple-flowered variety, with an upright growth habit. It recovers rapidly after cutting, requiring about six days less time from cutting to blooming than the variety Ranger. It is less cold hardy than Ranger, being about the same as Buffalo in this respect, according to the Research Division of the American Dehydrators Assn.

The important advantage of Lahontan over other varieties is its resistance to the stem nematode, an eelworm which causes serious damage to alfalfa in many irrigated valleys of the West. Lahontan is practically immune to this eelworm and damage caused by it is reduced to a minimum by using this variety in stem-nematode-infested areas.

Lahontan alfalfa is also resistant to bacterial wilt. Artificial inoculation tests in Nevada and California show that it is equal to Ranger in this respect. This is important because there are very few areas where the stem nematode is present that bacterial wilt is not also a factor in shortening the length of life of alfalfa stands, research officials state.

Where the stem nematode is not present, Lahontan has been at least equal to Ranger in forage production in Nevada and only about 7% less productive than California Common in California. Where the stem nematode is present, Lahontan is much superior to other varieties in these states.

Lahontan was developed for use in the stem-nematode-infested areas of Nevada and California. Additional tests are necessary to determine whether it is adapted to stem-nematode problem areas of other western states.

DOANE AGRICULTURAL RESEARCH

Research on products sold to or bought from farmers—potential sales—market trends—new types of products—procurement—distribution . . . How farmers think—how they react—is Key to farm sales . . . Let us discuss your problem with you.

Write for
FREE BOOKLET
Market Research Division
DOANE
AGRICULTURAL SERVICE, Inc.
Box 453, 5142 Delmar Blvd., St. Louis 8, Mo.
(Phone FOrest 1-2800)

USED THE WORLD OVER!
MINNEAPOLIS BAG CLOSERS
SEW CLOTH, BURLAP, MULTI-WALL
A MODEL FOR EVERY NEED
Write Dept. G 55
MINNEAPOLIS SEWING MACHINE CO
4865 Osseo Road, Minneapolis 12, Minn.

Use Feedstuffs WANT ADS for RESULTS

ADDING FATS AND OILS

(Continued from page 15a)

tities, storage capacity should be at least 10,000 gal. The tanks may be horizontal or vertical and must be supplied with steam coils for melting. While storage for carloads requires higher initial investment than for drums, this cost is usually recovered rapidly because of the lower cost of the fat. The temperature of working storage tanks from which material is being taken should be between 120 and 130° F. For protection of color and quality in large volumes, do not exceed 140° F. in storage tanks. A common practice is to maintain large volume storage tanks at a minimum temperature suitable for pumping and then to heat smaller quantities of fat to the proper spraying temperature just prior to mixing.

When to Mix in Fats

Fat may be mixed with dehydrated alfalfa meal immediately after drying or during blending. When added at the drying plant, the fat is metered into the stream of chopped hay just before the grinder or directly into the grinder at the point of air intake or sometimes into the fan on the grinder. The hammermill serves to mix the fat into the meal in this operation and the heat in the dry chops helps keep the fat in liquid form while mixing. In a blending operation, fat can be added at the blender in one or more small streams and nozzles are helpful but not absolutely necessary in this operation. Several suitable types of blenders are available, the most important consideration being thorough and fairly rapid mixing of the fat with the meal. Fat mixed with warm chops at the grinder should be at a minimum temperature of at least 120° F. and fat mixed at the blender should be at least 150° F. Fats may be quite successfully added to the pelleting operation in the steam chamber of the pellet mill or they may be added to the meal prior to the time that it is sent to the pellet mill.

Cost of Fats

The cost of adding fats to dehydrated alfalfa meal depends, of course, on the grade of fat used and the quantity. In figuring the cost of the fat added to meal, it should be remembered that an equivalent number of pounds of meal are removed from the ton and the cost per pound of the fat should be reduced by the cost per pound of the alfalfa meal. Thus, if fat costs 7¢ per lb. delivered and the alfalfa meal is worth 2½¢ per lb., the net cost of the fat introduced into the meal would be 4½¢ per lb. At a rate of 30 lb. to the ton, or 1½%, it would cost $1.35 per ton to grease the meal. This cost is frequently more than recovered by the benefits of dust control, better working conditions, reduced shrink, and the premium price which greased meal commands. Because of the large surplus of fats and oils today and in the foreseeable future, it is unlikely that the price of fats will advance much beyond their present position for any length of time.

An interesting development in the use of fats and oils in dehydrated alfalfa meal is that the fats may be used as carriers for the new vitamin antioxidants being considered for use in alfalfa meal. Since the recommended levels of these antioxidants in alfalfa meal are fairly small, it would be difficult to introduce them into the meal unless they were mixed with some sort of carrier. Fats and oils should serve as ideal carriers for these materials.

So that the alfalfa producer may comply with federal and state labeling requirements, it will be necessary for him to find out what antioxidants his fat supplier is using. The maximum amounts of the antioxidants which may be used in fat are established by the USDA meat inspection branch. Assuming that a fat has been stabilized by the addition of butylated hydroxyanisole, butylated hydroxytoluene and citric acid, the following statement should appear on the alfalfa bag or tag: "Added animal fat preserved with not more than .01% butylated hydroxyanisole, .01% butylated hydroxytoluene, and .01% citric acid." Other combinations of antioxidants may be used, however, so it is advisable to check with the fat supplier. Trade or brand names for antioxidant mixtures may not be used on the label.

REVOLUTIONIZED

(Continued from page 11a)

Additional installations are being planned in various places throughout the industry for next season. Even on the present basis, however, the industry can now pellet a large portion of its total output.

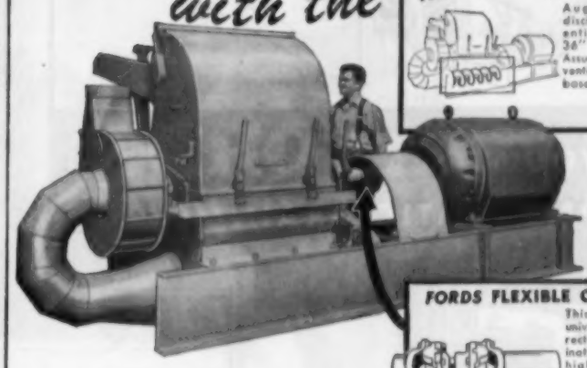
With fair luck in the weather, dehydrators can hope to at least run an average of 20 days of 20 hours each for the five-month growing period. If they run their pellet mills on an eight hour day, which many would plan to do, this would represent 800 hours per year operation. Measuring this against the capacity cited above yields a total normal pelleting capacity of some 400,000 tons, or 40% of the usual yearly production. Of course this figure could be stepped up by longer working days.

Some pelleting was done prior to the stepped-up usage of inert gas storage because some large feed mills prefer to have the material in that form. Developing from the pelleted material is a new product on the market consisting of granulated or crumblized pellets, which are still free flowing, fairly dust free and suitable for either bulk or sacked handling. This new product has had fairly wide acceptance in the trade.

Use of Fats and Oils

Concurrently with the increase of pelleting and gas storage, and probably ante-dating both to some extent, is the use of animal fats or vegetable oils in the treatment of dehydrated alfalfa meal to reduce its dustiness and thereby make it more acceptable to the user. First efforts along this

COOLER ALFALFA MEAL
DIRECT FROM
FORDS HAMMERMILLS
with the NEW "COOLER ZONE"
Auger-Blower discharge keeps entire width of 36" screen clear. Assures maximum ventilation in mill base.



FORDS FLEXIBLE COUPLING
This special double universal joint for direct driving mills eliminates the need for high cost machined surface alignment and heavy cast bases—gives greater bearing protection.

FOR DEHYDRATORS
FORDS 36" HAMMERMILL, with the new "COOLER-ZONE," utilizes a greater volume of cool air through the 954 sq. in. open throat intake construction, plus controlled ventilation of the mill base which draws in cool air directly under the screen and through the grind while material is in suspension.
The high head, open throat takes loose or baled hay with equal ease. FORDS utilize all-welded boiler plate construction, dynamically balanced rotor, and direct-drive blower fan to minimize destructive vibration, reduce power consumption, and increase output.

FORDS THORO-MIX MOLASSES BLENDER
Can be fed from hopper or at any angle from batch mixer. Mixes up to 50% molasses without balling or lumping. Capacities up to 6 tons per hr. Designed for easy cleaning.

OUR GUARANTEE
FORDS 36" FINISHING MILL will produce More Meal at lower per ton cost for as many trouble-free years as equipment costing two to three times as much.

OTHER FORDS INDUSTRIAL EQUIPMENT
Vertical Feed Mixer
"Corn Master" Sheller
Pneumatic Pellet and Grain-Veyor
Write for illustrated Booklet "THE BIG THREE"

MS MYERS-SHERMAN COMPANY
1601 S. ILLINOIS STREET STREATOR, ILLINOIS

A New Firm WITH EXPERIENCED MANAGEMENT
SHIRLING ALFALFA MILLS
PARKER V. SHIRLING
Ohio Street and 40 Hwy. • SALINA, KANSAS
DEHYDRATED & SUNCURED

Alfalfa Products . . .
To meet your nutritional needs completely
Service . . .
To meet your schedules faithfully
SQUARE FARE DE-HY MEAL CUBES
DEHYDRATED ALFALFA MEAL—PELLETS
DAWSON COUNTY FEED PRODUCTS, Inc.
LEXINGTON, NEBRASKA
PHONE 144 • TWX 82992

line were all made with oils, such as rice bran oil, soybean oil and cottonseed oil. They were applied in amounts from 8 lb. per ton to perhaps 30 lb. per ton. They not only reduced the dustiness of the product at the point of production and in the feed mills, but they also made a meal of much better appearance. Within the last 12 months many operators have switched to the use of animal fats, which are very low priced in the market price as compared to the vegetable oils.

There is a little more trouble and expense involved in using animal fats because of the high melting point. They must be kept at a relatively high temperature right up to the point of contact with the meal. Care must be taken to see that the fats obtained are of low fatty acid content. Otherwise, there may be some destruction of color upon storage of such treated meal. The fats used must also be stabilized with an antioxidant so they will not become rancid in storage and thereby jeopardize the fat soluble vitamins A, K and E, which are so valuable a part of dehydrated alfalfa meal.

The increase in demand for meal treated with fats or oils has been tremendous in the past 12 months and we would estimate that from 25% to 35% of all shipments of dehydrated alfalfa meal to formula feed mixers has been so treated.

In many instances the three developments of pelleting, bulk storage under inert gas and greasing and oiling have gone on concurrently. By this we mean that pellets themselves are reground all the way to a meal that is similar in screen size to the original meal, following which it is treated with grease or oil, and this results in a product which is more dense than the original meal and far less dusty.

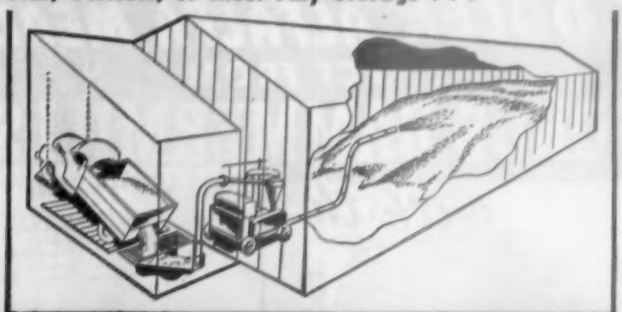
These are some of the things that the producers of dehydrated alfalfa have been and are doing to give a better product to the consumer. But it is not the whole story, by any means.

Changes Continuous

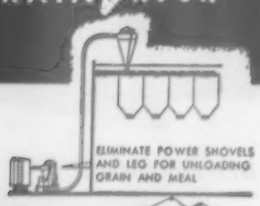
It has become almost axiomatic in the dehydrated alfalfa industry that much of today's machinery and equipment is tomorrow's junk pile. This has been more or less true of any new industry of as many phases of operation as the dehydrated alfalfa industry has. About the only piece of equipment that has not changed radically in the last 10 years is the dehydrator itself.

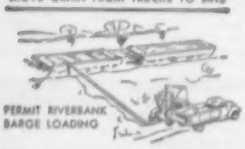
Harvesting for instance has come a long way from the days of mowing, windrowing, picking it up and hauling it to the plant as long hay to be hand pitched from wagons to chopper before moving into the dehydrator. Nowadays the alfalfa never touches the ground. No one uses a pitch fork and the old hand labor is done by fans and automatic dumps. Regulation of the feed to the dehydrator in the old days depended largely on how energetic the man was with his pitch fork or how tired he became near the end of the day. Today the automatic feeders cause the flow to the dehydrator to be quite uniform and at maximum rate at all times. This has done a great deal to improve the quality of the finished product because the less the lost time between the cutting of the green alfalfa and its entrance into the dehydrator proper the less is the loss of carotene, and probably of other nutrients as well.

For Handling Alfalfa Pellets In and Out of Flat, Vertical, or Most Any Storage . . .



YOU NEED A **FORDS**
PNEUMATIC GRAIN*VAYOR*





Completely redesigned, the new FORDS portable GRAINVAYORS are designed to solve any unusual loading and unloading or salvage operation. 3 models that handle granular, flaky and powdered material as well as grain. New compounding multi-stage air turbine permits larger material volume to be conveyed up to 300 ft. with smaller air volume and minimum horsepower. Portable or stationary models provide low cost pneumatic handling of grain and fine materials at a fraction of the cost of other permanent facilities.

NATIONWIDE SALES AND SERVICE
Write for Literature and Name of Nearest Distributor

MS MYERS-SHERMAN COMPANY
1901 S. ILLINOIS STREET • STREATOR, ILLINOIS

ALBEMARLE PAPER MANUFACTURING COMPANY
Richmond, Virginia

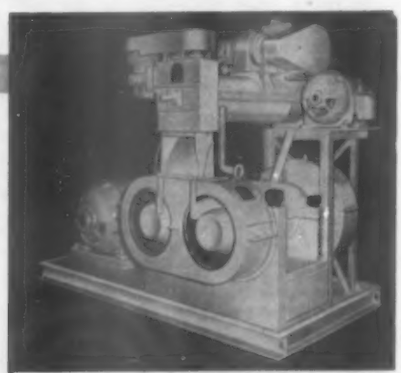
more feedmen read

FEEDSTUFFS

than any other magazine in the field

NOW...

you can
PRODUCE MORE PELLETS
per dollar of cost
with a
NEW CYCLOPS
All Purpose
PELLET MILL



You're on the way to new profits, higher production and new efficiency with the all-new Cyclops Pellet Mill *built by Williamson.* Important changes in the new Cyclops give you more capacity with more economy.

THE NEW CYCLOPS PELLET MILL . . . HEAVIEST DUTY MILL MADE

- Pellets full range of materials from dry salt to high molasses feeds
- Die sizes from 3/32" to 3/4"—longer life dies
- Round, cubed or oblong pellets
- No steam for most applications
- Lubricate only every 5,000 *operating* hours
- Heavy duty Timken Super Roller Bearings on main die shafts
- *And the guaranteed long life of Williamson-Built Equipment*

Get full details on the modern way to make pelletizing pay! Contact John W. Williamson and Sons, Inc., 1545 South Greenwood Avenue, Montebello, California.

WILLIAMSON-BUILT

REPRESENTATIVE MATERIALS LIST

Solvent process meal
Cotton trash and burrs
Dehydrated materials
Molasses feeds
Minerals and supplements
Figs
and other economical feeds

WILLIAMSON

THE UNIDENTIFIED FACTOR

...SMALL BUT MIGHTY

For weeks this little "Unidentified Factor" character with the question-mark topknot has been a background figure in our vitamin advertisements. An "unidentified vitamin" is a vitamin which is known to exist only by virtue of the fact that certain natural products show unique biological activity in improving growth, reproduction, or other functions of the body when fed as supplements to animals receiving rations known to contain optimum amounts of all known nutritional elements.

An "unidentified vitamin" becomes an "identified vitamin" when further research work has resulted in the isolation and identification of a pure chemical compound which has the same unique biological activity. Thus all of the "identified vitamins" described in previous advertisements of this series were originally unidentified vitamins.

Alfalfa has long been known to be a rich source of a variety of "Unidentified Factors" for animals ranging from protozoa to steers. When fed at recommended levels, Dehydrated Alfalfa will add important amounts of "Unidentified Factors" to poultry and livestock rations. Recent researches on growth and reproduction in poultry, on baby pig viability, and on fiber digestion in cattle are of particular interest to the feed manufacturer.

National Alfalfa's widespread facilities, processing techniques, and quality control assure the feed manufacturer of one fully integrated source of premium quality Dehydrated Alfalfa the year 'round.

This is the sixth in a series of National Advertisements reviewing the more important nutritional qualities found in premium quality Dehydrated Alfalfa.

TO BETTER SERVE THE FEED INDUSTRY

ACROSS THE LAND

NATIONAL ALFALFA DEHYDRATING AND MILLING COMPANY

GENERAL SALES OFFICES: BOARD OF TRADE BUILDING • KANSAS CITY 5, MO.

You'll Be Enthusiastic, Too!

About LOCKHART'S Dehydrated Alfalfa

A Top Quality Product from the Fertile Mojave Desert

Call Barstow 8316 for Prompt Service

LM

LOCKHART RANCH

LOCKHART, CALIFORNIA

Research on Alfalfa

By Dr. L. E. Card

Head of the Department of Animal Science, University of Illinois, Urbana, and Chairman of the Research Council of the American Dehydrators Assn.

Alfalfa is now grown on about 15 million acres in the U.S., which makes it more important than any other perennial crop grown for forage purposes. Experiment station workers in many parts of the country are therefore interested in research concerning its production, fertilization, improvement, processing and utilization.

The American Dehydrators Assn. has for several years been sponsoring some of this research with grants-in-aid to a number of agricultural experiment stations. During the past year such sponsored research has been under way at eight different stations. The projects, arranged alphabetically by stations, are as follows:

Colorado—Utilization of carotene in the animal body.

Illinois—Unidentified growth factors in alfalfa.

Iowa—Cattle supplements for cornstalk silage, corncobs and corn silage.

Kansas—Economics of alfalfa dehydration.

Montana—Dehydrated alfalfa as a supplement for wintering pregnant ewes.

Nebraska—Soil fertility in relation to the production of alfalfa for dehydration.

Oklahoma—Dehydrated alfalfa meal and alfalfa hay as protein supplements for fattening beef calves.

Dr. L. E. Card

Texas—Nutritional value of dehydrated alfalfa meal as a source of unidentified factors in breeder rations for turkey hens.

Early work at the Colorado Station indicated that the carotene of alfalfa is utilized more efficiently by the chicken as a source of vitamin A

(Continued on page 38a)

3 NEW MODELS FOR 1955!

ARDRIER DEHYDRATORS

help you put

Green Pasture Nutrition

in your mixed feeds

● DEHYDRATED ALFALFA in your mixed feeds means more profit "in the bag" for you, because there's more nutrition in the bag for your customers! Alfalfa "flash dried" in Ardrier Dehydrators contains a protein value of 17% to 24%, a fat content of 2% to 3%, and 7 times more vitamins than found in sun-cured, mature alfalfa.

Whatever your tonnage, there's an Ardrier Model designed to help you build new and repeat business with quality feeds containing all the green pasture nutrition of growing crops.

. . . for producing two to four dry tons per hour . . .

MODEL SD105-32 is the largest dehydrator in the Ardrier line designed for big production of highest quality Dehydrated Alfalfa.

. . . for producing one to two dry tons per hour . . .

MODEL SD85-25 is built to handle 500 to 1000 acres of alfalfa. Like all Ardrier Models, it economically dehydrates beet pulp, citrus peel, sorghum, fish meal and many other feed ingredients, as well as forage crops.

. . . for producing up to one dry ton per hour . . . THE NEW, LOW-COST FARM AND RANCH DEHYDRATOR . . .

MODEL SD75-22, the latest addition to the Ardrier line, is ideal as an auxiliary machine to help out your big Ardriers during the Spring rush, or for year 'round operation processing a wide variety of products.

ARD-32

Made by THE HEIL CO. for

ARNOLD DRYER COMPANY

Department 7215, 3072 W. Montana St.

Milwaukee 1, Wisconsin

Now POULTRY HORMONIZING . . IN THE FEED!

LIPAMONE®

ESTROGEN SUSPENSION

Here is the news you have been waiting for. LIPAMONE supplies a convenient form of poultry hormone for incorporation in your Finisher feeds.

Your Growers and Dealers Will Enjoy These Advantagees . . . . .

SIMPLE — The grower changes to LIPAMONE-fortified Finisher ration three weeks before slaughter. Saves labor. No handling of individual birds.

SAFE — Birds completely unaware of special treatment—no shock. Normal feed and water consumption. Dosage certain. Edible parts contain no added hormone residue.

EFFECTIVE — Excellent distribution of fat under skin and throughout muscle tissue. More A-Grade Liponettes dressed out. Tender, flavorful and juicy, with distinctive cooking qualities.

LIPAMONE Estrogen Suspension, the result of years of research and development, supplies a high concentration of Dienestrol Diacetate, an organic compound with estrogen (female hormone) activity. This supplement will be distributed only through formula feed manufacturers for proper dispersion in their rations for market chickens and turkey fryers.

Feeds containing LIPAMONE may be sold only under supplements to our own effective New Drug Application. We will supply the necessary forms for completion, and file your supplemental application. We are permitted to ship LIPAMONE Estrogen Suspension only after clearance of such application has been granted to each feed manufacturer.

White Laboratories, Inc.

AGRICULTURAL DIVISION

KENILWORTH NEW JERSEY

CATTLE RATIONS

(Continued from page 8a)

each cow should receive in addition to the pelleted alfalfa, 5 to 6 lb. of coarse roughage per day. A lowered fat percentage of the milk will result when the pelleted form is used as the sole source of roughage.

In the case of calves and heifers, either the chopped or pelleted forms can be used as the sole source of roughage. Additional vitamin D is needed if such a feeding practice is followed with calves and possibly should be recommended with heifers, especially in the case where exposure to sunlight is limited.

Artificially dehydrated alfalfa meal is unpalatable as the sole source of roughage and results in lowered consumption by dairy cattle. Addition of 10% of molasses to the meal resulted in comparable intakes in the case of the lactating cow to that observed for the pelleted form. Therefore, if it is desired to feed the meal, it is recommended that 10% molasses be added to insure optimum intake of this form. As in the case of the pelleted form, not more than 80% of the roughage should be replaced by alfalfa meal in lactating dairy cattle rations, or each cow should receive 5 to 6 lb. of coarse roughage per day.

In general, artificially dehydrated alfalfa fed as the sole source of roughage will result in greater milk yields in lactating dairy cattle and greater growth in calves and heifers, than farm grown roughages. This is due primarily to two factors: (1) artificially dehydrated alfalfa is generally cut at an earlier stage of maturity than most farm grown roughages and (2) the harvesting process results in less nutritive loss than that experienced under most farm conditions. Therefore, a product with a higher nutritive value per unit of dry matter results from artificial dehydration. Also in the case of artificially dehydrated and pelleted alfalfa, greater feed consumption results, undoubtedly due to its compactness.

2. As a supplement to nonleguminous or poor quality roughage

Artificially dehydrated and pelleted alfalfa can be added to lactating dairy cattle rations with resulting increases in total nutritive intake accompanied by increase in milk yields. Experimental evidence to date indicates that for each addition to the basal rations of 0.5 lb. of pelleted alfalfa from 0.0 to 1.5 lb. per 100 lb. of live weight, total digestible nutrient intake increased and it was accompanied by an increase from 0.9 to 2.7 lb. of 4% fat corrected milk per day. These data are summarized in the following table:

Amount of artificially dehydrated alfalfa pellets added to basal ration per day for a 1,000 lb. cow	Increased lb.* total digestible nutrient intake per cow per day	Increased lb.* of 4% fat corrected milk per cow per day
5.0	1.8-3.0	0.9-2.7
10.0	3.6-6.0	1.8-5.4
15.0	5.4-9.0	2.7-8.1

*Range based on results with field-cured hays fed ad libitum, limited silage or no silage and grain fed on the basis of 1 lb. to each 4 or 5 lb. of 4% fat corrected milk.

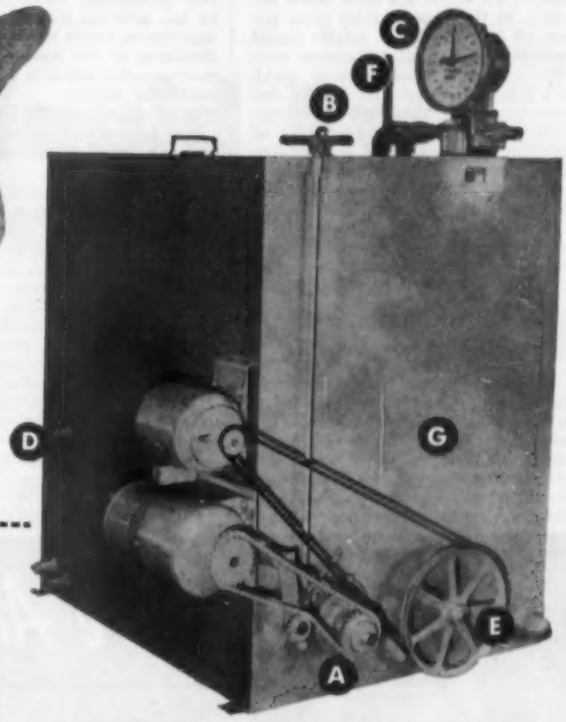
These results with respect to increased milk yield, when artificially dehydrated and pelleted alfalfa are added to the basal ration of lactating dairy cattle, are interpreted as due primarily to increased nutritive intake and not to any particular nutritive lack of the basal rations and resultant supplementary effect of the alfalfa. Therefore, in recommending the addition of pelleted alfalfa to basal rations, it should be based only on increased nutritive intake.

Furthermore, if higher levels than

Another WENGER 1st!

NEW WENGER ANIMAL FAT FEEDER

Mix Animal Fat and Alfalfa Meal Uniformly at Hammermill or Pellet Mill



Here's the equipment to end all your alfalfa oiling problems. Whether you desire to mix oils or fats at your hammermill or in the tempering chamber of your pellet mill, the new Wenger Series 100 Fat Feeder assures complete uniformity of delivery of fats or oils, with pin-point control of fat flow, and with automatic temperature control. If you are one of the many who have experienced an uneven mixing of fat in your dehydrated alfalfa meal—here is your answer to the need for dustless, uniformly oiled meal. With the 100 Series you may inject fats directly into the hammermill, or, if you pellet alfalfa meal, directly into the tempering chamber of your pellet mill. No clogging, no uneven rate of delivery, no control valves to stick with the Wenger Metered Flow Fat Pump.

No Brass, Bronze or Copper ever comes in contact with the animal fats added through the special Meonite pump. Therefore the stabilizing agent is not affected and the problem of copper-toxicity in the feed is eliminated.

Cut cost of pelleting by blending animal fats which lubricate the dies, reducing wear and replacement to a fraction! Your pellets actually cost less with animal fats added!

HERE'S HOW WENGER FAT FEEDER SOLVES YOUR PROBLEMS!

A **Famed Wenger Proportioning pump** built into tank for automatic heating . . . Cast Meonite construction to eliminate copper toxicity and maintain stabilizer effectiveness . . . pumps from 1 lb. to 75 lbs. per minute without flow variation . . . cannot clog or become obstructed by scum or fat particles!

B **Exclusive Wenger Pump Control**—does what no valve can do—feed any volume without clogging. Simple dial setting accurately regulates the flow. No restrictions or valves in fat flow line.

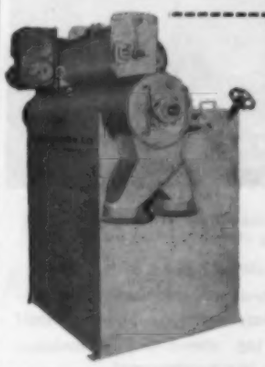
C **Special Liquid Fat Meter**—10" face . . . dual setback hands . . . recording 6-figure totaling device . . . calibrated in lbs. of fat.

D **Steam Temperature Controls**—Fully adjustable for 125° to 175°—the perfect temperature for liquid fat feeding . . . iron heating coils . . . thermometer and automatic thermostat.

E **Special Built-in Agitator**—keeps liquid fats uniform . . . driven by 1½ h.p. TEFC motor.

F **By-Pass Valve**—permits recirculating fat without shutting down unit.

G **400 Gallon Tank**—provides constant supply to your pellet mill or mixer.



MIX UP TO 9 TONS OF PERFECTLY DUSTLESS MEAL PER HOUR WITH NEW WENGER 750 SERIES FAT MIXER

For fast, efficient fat mixing there's nothing that can touch the new Wenger 750 Series Hi-Speed Fat Mixer. Has all the special fat metering and pumping features of the Series 100 Fat Feeder—cast meonite pump, special agitator, automatic temperature controls, liquid fat mixer. PLUS the finest high speed mixer ever produced.

Series 750 Fat Mixer can be used as either a fat or molasses mixer. Build up your own molasses feed business in off-season periods. MAKE YOUR BUSINESS A YEAR AROUND BUSINESS.

CAROTENE STABILIZERS? These fat and oil soluble stabilizers are said to vastly retard carotene deterioration.

Both the 100 Series Fat Feeder and the 750 Series Fat Mixers have built-in fat agitators to assure you of an even, uniform mixture of these oil soluble stabilizers in your fats or vegetable oils.

For Perfectly Dustless Meal—For Perfect Moisture Conditioning—For Alfalfa Meal Which is Uniformly Oiled and Conditioned—Look to WENGER.

MOISTURE CONTROL PROBLEM?

The Wenger 750 Series can be used as a moisture conditioner, applying both fats and moisture simultaneously, with complete uniformity of liquid distribution through every particle of your alfalfa meal.

For year around success—for dustless, perfectly oiled meal—for uniform moisture conditioning—and for year around stability of your operation—investigate the Wenger 750 Series Fat Mixer.

SMALLER MODELS ALSO AVAILABLE

Write Today for Wenger's Suggested Fat-Molasses Installation for Year Around Success.

Wenger Mixer Mfg. Co.

SABETHA, KANSAS

those cited above are used, some decrease in the rate of milk yield per unit of added pelleted alfalfa would possibly result. This is because over wide nutritive intakes, milk yield, as a function of nutritive intake, follows the law of diminishing returns. That is, for each additional unit of nutritive intake there is not a constant increase in milk yield, but some decrease in rate of response is experienced. However, over the limited levels studied, 0 to 1.5 lb. of pellets per 100 lb. of live weight per cow per day, the response of milk yield was found to be essentially constant.

3. As a replacement for a portion of the grain

In the case of lactating dairy cows, the grain mixture may contain up to 30% of artificially dehydrated alfalfa in either the cropped or pelleted forms. Because of the relative unpalatability of the meal form, it should constitute only up to 10% of the grain mixture. It is possible that this percentage could be increased by the addition of molasses or other ingredients which would alleviate the dustiness of the meal; however, experimental evidence is lacking on this particular aspect.

The same general recommendations appear to be applicable for growing grain mixtures and calf starters.

In general, artificially dehydrated alfalfa can vary in nutritive value (total digestible nutrients or net energy) from that of field-cured and field-baled alfalfa to almost that of an average grain mixture, depending primarily upon the stage of maturity when harvested. Therefore, the response (milk yield or gain in live weight), to the substitution of artificially dehydrated alfalfa for a portion of the grain mixture, has varied considerably from experiment to experiment. It would be anticipated that on the average a reduction of 5 to 10% in total digestible nutrients would result by substituting artificially dehydrated alfalfa for 30% grain in the average lactating or growing mixture. For optimum use of grain mixtures containing artificially dehydrated alfalfa, recognition of this lowered nutritive value is therefore necessary. It should be pointed out that the use of dehydrated alfalfa products in dairy cattle rations is dependent upon the price relationship to the nutrients which it replaces.

4. As a carotene, provitamin A, supplement

When barn feeding of poor quality roughage is preceded by a poor pasture season, it would be advisable to add supplementary carotene to the lactating dairy cow's ration. The cow's requirement for carotene (60 milligrams/1,000 lb. body weight) can be readily met by feeding 1 lb. of artificially dehydrated alfalfa pellets (containing 100,000 U.S.P. units of vitamin A activity per pound) per 1,000 lb. of live weight or by adding 10 to 20% of artificially dehydrated alfalfa in the chopped or pelleted form to the grain mixture. It is recognized that the addition of higher amounts of artificially dehydrated alfalfa would result in higher carotene and vitamin A content of the milk. However, due to the lack of economic importance of increased carotene and vitamin A content of the milk, this practice cannot be recommended.

For the pregnant heifer or dry cow, under conditions other than good to excellent quality roughage feeding, it is recommended, that during the last one to two months prior to calving, each animal receive the equivalent of 1.0 to 1.5 lb. of artificially dehydrated alfalfa (100,000 U.S.P. units of vitamin A activity per pound) either as a roughage or grain supplement. This will insure colostrum of high vitamin A activity which is essential to build vitamin A stores in the new born calf.

Under most systems of calf raising other than the nurse cow system, additional carotene is needed until the calf is consuming a minimum of 1 to 1.5 lb. of good quality roughage per day. Therefore, it is recommended that under limited whole milk,

• • •

Literature Cited

Bartley, E. E., et al—Effects of supplementing dairy cow rations with dehydrated alfalfa. (Abstract); J. Dairy Sci., 34:509, 1951.

Blosser, T. H., et al—The use of dehydrated forages in dairy cattle rations. II. Comparative values of finely ground, chopped and pelleted dehydrated alfalfa or grain replacements for lactating dairy cows; J. Dairy Sci., 35:515, 1952.

Brown, D. C., et al—Alfalfa pellets—roughage or concentrate? Wyoming Agr. Expt. Sta. Bull., 321, 1952.

Burke, J. D.—Results of a two year survey of hay quality on New York farms; proceedings Cornell Nutrition Conference, pp. 1-10, 1950.

Burroughs, Wise, et al—The influence of alfalfa hay and fractions of alfalfa hay upon the digestion of corn cobs; J. Animal Sci., 9:207, 1950.

Dolge, K. L., et al—Effect of feeding various percentages of artificially dehydrated alfalfa meal on the growth and carotene intake of dairy calves; J. Dairy Sci., 35:424, 1952. See also Eaton, H. D., J. Dairy Sci., 36:192, 1953, for correction pertaining to carotene concentrations of the feeds fed in this paper.

Dolge, K. L., et al—Ability of Holstein calf to exhibit preferences for alfalfa pellets and starter pellets when fed as mixtures; Storrs (Conn.) Agr. Expt. Sta. Bull., 291, 1952.

Dolge, K. L., et al—Effect of initial level and rate of increase of artificially dehydrated alfalfa in complete rations on growth and carotene intake of Holstein dairy calves; J. Dairy Sci., 36:235, 1953.

Eaton, H. D., et al—A comparison of U.S. No. 2 field-cured and field-baled alfalfa hay with artificially dried and ground and pelleted alfalfa hays as a source of carotene and roughage for Holstein calves; J. Dairy Sci., 34:124, 1951.

Eaton, H. D., et al—Field-cured and field-baled alfalfa versus artificially dried and chopped and pelleted alfalfa hays as a source of carotene and roughage for Guernsey and Holstein calves; J. Dairy Sci., 35:98, 1952. See also Eaton, H. D., J. Dairy Sci., 36:192, 1953, for correction pertaining to carotene concentrations of the feeds fed in this paper.

Gardner, K. E., and Akers, W. F.—Calves prefer pelleted hay; Hoard's Dairyman, 99: 1063 (Dec. 10 issue), 1954.

Guilbert, H. R., et al—Minimum vitamin A and carotene requirements of mammalian species; J. Nutrition, 19:91, 1940.

Hansen, H. M., et al—Effect of form of alfalfa when fed as the sole source of roughage to Guernsey cows on the carotenoid and vitamin A content of milk; J. Dairy Sci., 37:311, 1954.

Hope, E. B., et al—The use of dehydrated forages in dairy cattle rations. I. Grain substitution with finely ground material; J. Dairy Sci., 33:306, 1950.

Huffman, C. F.—Roughage quality and quantity in the dairy ration; J. Dairy Sci., 22:889, 1939.

Monroe, C. F., et al—The loss of nutrients in hay and meadow crop silage during storage; J. Dairy Sci., 29:239, 1946.

Porter, G. H., et al—Relative value for milk production of field-cured and field-baled, artificially dried-chopped, artificially dried-ground and artificially dried-pelleted alfalfa when fed as the sole source of roughage to dairy cattle; J. Dairy Sci., 36:1149, 1953.

Reed, O. E.—Report of the chief of the bureau of dairy industry, pp. 14-15, U.S. Department of Agriculture, 1952.

Rousseau, J. E., Jr., et al—Relative value of carotene from alfalfa and vitamin A from a dry carrier fed at minimum levels to Holstein calves; J. Dairy Sci., 37:589, 1954.

Rumery, M. G. A., and Baker, G. N.—Growing and feeding Holstein steers for beef; North Platte (Neb.) Agr. Expt. Sta. Bull., 48, 1953.

Spielman, A. A., et al—The placental transmission and fetal storage of vitamin A and carotene in the bovine; J. Dairy Sci., 29:707, 1946.

Spielman, A. A., et al—The relationship of the prepartum diet to the carotene and vitamin A content of bovine colostrum; J. Dairy Sci., 30:343, 1947.

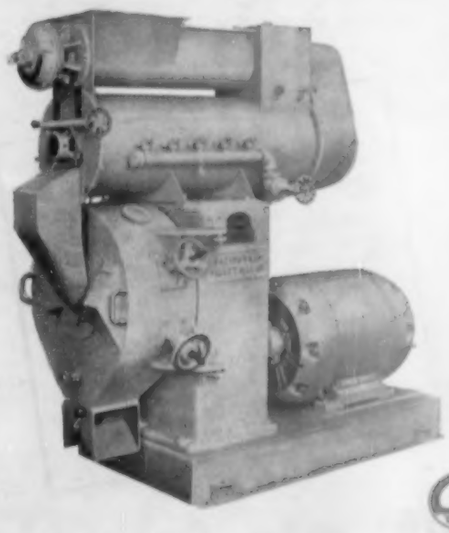
Spielman, A. A., et al—The effect of prepartum vitamin A supplementation on the health and performance of the young calf; J. Dairy Sci., 32:367, 1949.

Warren, F. S., et al—Lactation response to artificially dehydrated and pelleted alfalfa added to a ration of timothy-grass mixed hay and grain; J. Dairy Sci., 37:523, 1954.

1200 tons of ¾" dehydrated alfalfa meal pellets produced on California Century Pellet Mills, ready for shipment.

– with the High-Capacity CALIFORNIA

CENTURY 75 and 100 HP Pellet Mills



More and more of these machines are being sold today for profitable pelleting of dehydrated alfalfa meal.

★ They show better operation, higher pellet quality!

★ Special CALIFORNIA-designed accessories and procedures simplify pelleting, speed up pellet output!

★ Low power cost with big, direct-coupled motor—delivers the most pellets per horsepower!

Investigate all the advantages of pelleting alfalfa with this new, highly specialized equipment.

Write for Full Details

CALIFORNIA PELLET MILLS

CPM

CALIFORNIA PELLET MILL COMPANY
1800 Folsom St., San Francisco 3, California
1114 E. Wabash Ave., Crawfordsville, Indiana
1728 Grand Avenue, Kansas City 8, Missouri

Sales and Service Representatives in:
Atlanta • Buffalo • Denver • Fort Worth • Harrisburg • Memphis • Minneapolis • Omaha • Seattle • St. Louis

NOW!

New Liquid Fat Discovery

Marcol B-75

ADDS FAT to ALFALFA

AND *ALL* FEEDS

NO EXTRA LABOR COSTS!

NO COSTLY EQUIPMENT NEEDED!

NO MIXING PROBLEMS!

- Marcol B-75 stabilizes Vitamin A
- Laboratory tests prove conclusively that Marcol B-75 is TWICE as effective as tallow in laying dust.
- Marcol B-75 handles, pours and mixes like water even at low temperatures.
- Marcol B-75 does not darken feed under prolonged storage.

WRITE FOR FREE SAMPLE AND COMPLETE DETAILS

Made Exclusively by

MARCO CHEMICAL COMPANY

20th & North Grove
Phone NOrthcliff 2803

Fort Worth, Texas
P. O. Box 8

MARCO CHEMICAL CO., P. O. Box 8, Fort Worth, Texas

Please send me a FREE SAMPLE of MARCOL B-75.

Firm Name_____

Address_____

City_____ State_____

Attention of_____

limited calf starter and ad libitum hay systems, that the calf starter contain from 7 to 10% artificially dehydrated alfalfa (100,000 U.S.P. units of vitamin A activity per pound) when the milk allowance is from 300 to 350 lb. per calf; and from 10 to 20% when the milk allowance is less than 300 lb. per calf. With skim milk systems of raising calves, it is doubtful whether calves would consume sufficient grain, containing any reasonable amount of artificially dehydrated alfalfa, to meet their carotene requirement. Therefore, vitamin A feeding oil to meet the calf's vitamin A requirement is generally given the calf directly.

In tables 1 through 4 these recommendations are summarized.

TABLE 1—Utilization of Artificially Dehydrated Alfalfa as Main Source of Roughage

Animals	Form of artificially dehydrated alfalfa	Recommendations	Expected results
Lactating cows	Chopped	a. Can replace all roughage.	↑
	Pelleted	a. Should replace not more than 30% of roughage or allow each cow 5 to 6 lb. coarse roughage per day. b. Use as coarsely ground alfalfa as is feasible to pellet.	
	Meal	a. Should replace not more than 30% of roughage or allow each cow 5 to 6 lb. coarse roughage per day. b. Add 10% molasses to meal to prevent dustiness and increase palatability.	Slightly greater nutritive intake accompanied by slightly greater milk production or increases in body weight.
Heifers and dry cows	Chopped	a. Can replace all roughage.	
	Pelleted	a. Can replace all roughage. b. Use as coarsely ground alfalfa as is feasible to pellet.	
	Meal	a. Can replace all roughage. b. Add 10% molasses to prevent dustiness and increase palatability.	
Calves	Chopped Pelleted Meal	Same as for heifers and dry cows (additional vitamin D needed in this case).	↓

TABLE 2—Utilization of Artificially Dehydrated Alfalfa as a Supplement to Non-Leguminous or Poor Quality Roughage

Animals	Form of artificially dehydrated alfalfa	Recommendations	Expected results
Lactating cows	Pelleted	a. Add from 0.5 to 1.5 lb. of pellets per 100 lb. of live weight per day. b. Use as coarsely ground alfalfa as is feasible to pellet.	For each 0.5 lb. of pellets added per 100 lb. of live weight per cow per day an increase in total digestible nutrients of 1.8 to 3.0 lb. and 4% fat corrected milk of 0.9 to 2.7 lb. per cow per day.
Heifers and dry cows	Pelleted	a. Add sufficient pellets per animal per day to obtain desired live weight gains. b. Use as coarsely ground alfalfa as is feasible to pellet.	↑ Increases in live weight reflecting increased total digestible nutrient intake. ↓
Calves	Pelleted	Same as for heifers and dry cows.	

TABLE 3—Utilization of Artificially Dehydrated Alfalfa as a Replacement for a Portion of the Grain Mixture

Animals	Form of artificially dehydrated alfalfa	Recommendations	Expected results
Lactating cows	Pelleted	a. Use up to 30% of the grain mixture. b. Use as coarsely ground alfalfa as is feasible to pellet.	↑ When artificially dehydrated alfalfa is substituted for 30% of the grain mixture, a reduction of 5 to 10% in the total digestible nutrient content results. Therefore, additional amounts of this alfalfa grain mixture are needed to be fed, if comparable results to an all grain mixture are desired. ↓
	Chopped	a. Use up to 30% of the grain mixture.	
	Meal	a. When added alone use up to 10% of the grain mixture. b. When 10% molasses added to the meal, possible to use up to 20 to 30% of the grain mixture.	
Heifers and dry cows	Pelleted Chopped Meal	Same as for lactating cows.	
Calves	Pelleted Chopped Meal	Same as for lactating cows.	

TABLE 4—Utilization of Artificially Dehydrated Alfalfa as a Carotene, Provitamin A, Supplement

Animals	Form of artificially dehydrated alfalfa	Recommendations	Expected results
Lactating cows	Pelleted	a. Use only in the case of barn feeding of poor quality roughage preceded by a poor pasture season. b. Allow 1 lb. pellets (100,000 U.S.P. units of vitamin A activity per lb.) per 1,000 lb. live weight per cow per day.	↑ Sufficient carotene to meet National Research Council's recommended allowance of 60 micrograms of carotene per lb. of live weight.
	Chopped	a. and b. As above.	
	Meal	a. As above. b. Include 10% meal in the grain mixture or 10 to 20% with added molasses. The meal to contain 100,000 U.S.P. units of vitamin A activity per lb.	
Heifers and dry cows	Pelleted	a. Use only in the case of heifers and dry cows 90 to 60 days prior to calving and only when the roughage fed is below average quality. b. Allow each animal 1.0-1.5 lb. of pellets (100,000 U.S.P. units of vitamin A activity per lb.) per 1,000 lb. live weight per day.	↑ Sufficient carotene to meet National Research Council's recommended allowance of 90 micrograms of carotene per lb. of live weight per day.
	Chopped	Same as a. and b. above.	
	Meal	Same as a. above. b. Include in grain mixture sufficient amount to insure each animal 1.0-1.5 lb. meal (100,000 U.S.P. units of vitamin A activity per lb.) per 1,000 lb. live weight per day.	
Calves	Pelleted	a. Can be used in a mixture if starter pellets are approximately same size. b. Include 7 to 10% in starter when milk allowance is from 300 to 350 lb. c. Include 10 to 20% in starter when milk allowance is less than 300 lb.	↑ Sufficient carotene to meet National Research Council's recommended allowance of 60 micrograms of carotene per lb. of live weight per day. ↓
	Meal	Same as b. and c. above, add molasses if meal is added above 10% level in the starter mixture.	

JOIN THE CROWD OF ALFALFA PRODUCERS AND HARVEST THE ECONOMICAL WAY

The Jones mowing bar attachment for Fox choppers gets the job done. Ask most any producer. Get our quotation on new and rebuilt Fox choppers. We manufacture 7 ft. and 8 ft. cut mowing bars for any model Fox chopper. We also manufacture high capacity 8 ft. and 10 ft. x 40 ft. dehydrators complete; also parts such as trunions, burners, blowers, self-feeders 10 ft. x 30 ft. two load capacity, finger-tip control. We sell Prairie Schooner self-unloading trailers. We guarantee our equipment to do the job better. Write for prices. All the above made here in Topeka. We export.

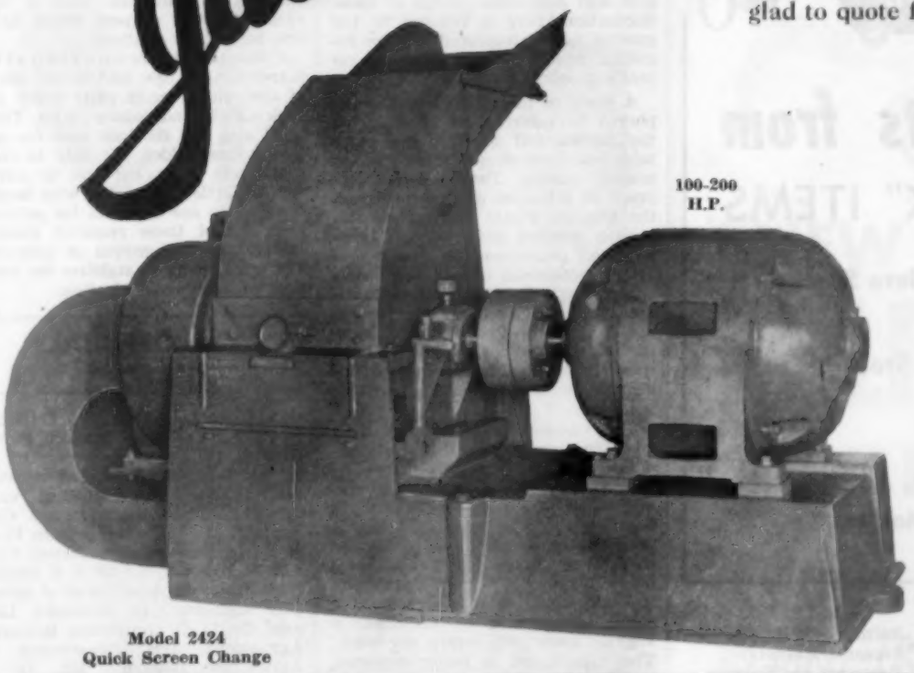
JONES ELECTRIC MACHINERY CO.

622 VAN BUREN TOPEKA, KANSAS PHONE 2-9311

Your Choice of Hammermills for Alfalfa Processing . . .

. . . by Jacobson

The specific problems encountered in alfalfa dehydrating are being met and solved very handily by Jacobson grinding equipment. Jacobson offers a variety of hammermills to meet the most exacting requirements in any situation. Every Jacobson hammermill provides exceptionally low maintenance and operating costs, with surprisingly high capacity. Your Jacobson Sales Engineer will be glad to quote figures.



100-200 H.P.

Model 2424
Quick Screen Change

Jacobson AJACS Hammermill

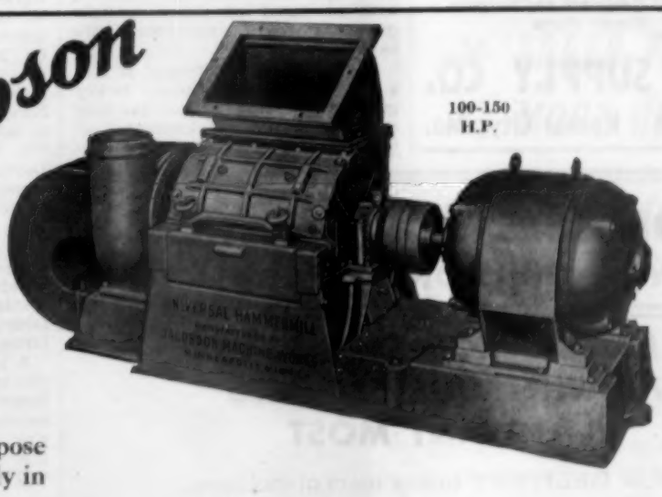
Open throat design, with tip speed of 22,600 feet per minute, for pulverizing alfalfa and all types of grain.

PLUS THE NEW No. 10 Jacobson UNIVERSAL Hammermill

37" Screen width

Presently grinding Alfalfa Pellets *in excess of 15 tons per hour*

100 to 200 H.P.



100-150 H.P.

Jacobson No. 8 UNIVERSAL Hammermill

A heavy-duty, all-purpose grinder used effectively in alfalfa processing.

Write for Bulletins and the Name of Your Jacobson Sales Engineer

Over 45 Years of Continuous Service to the Feed Industry

JACOBSON MACHINE WORKS

1090 TENTH AVE. S.E.—Dept. M
MINNEAPOLIS 14, MINNESOTA

RESEARCH ON ALFALFA

(Continued from page 30a)

than is pure carotene or than some other natural sources. The current project was aimed at further confirmation of this finding and at isolation and identification of the factor as a chemical entity. Such work is slow and difficult, and none of the alfalfa fractions so far tested has been shown to contain the utilization factor which is being sought.

Repeated tests at the Illinois station have shown a growth response in chicks when fed 5 to 10% of alfalfa meal in a semi-purified diet which contained all nutrients known to be required by the chick. The current project deals with attempts to isolate and identify the growth-promoting factor by various chemical procedures. In general, the residues from various extraction procedures have shown growth promoting activity almost equivalent to the original material. These results indicate that at least part of the growth response shown by alfalfa is caused by some factor closely associated with the structural elements of the plant.

The Kansas station is studying the economics of alfalfa dehydration including some phases of marketing. An analysis of the price trends of 17% protein dehydrated meal at Kansas City, showed that from 1938-53 the price tended to go up from August to November, and down from February to June. It was never lower in October, November and December than in the preceding June, July, August and September. Some of these fluctuations may be reduced by the greater use of improved storage facilities which the industry has recently developed.

A study of the utilization of phosphorus by subirrigated alfalfa from the surface soil down to the water table has been completed at the Nebraska station. Twenty-five to 40 years of intensive alfalfa culture in the Central Platte Valley has materially reduced the total and available soil phosphorus to a depth of 11 ft. Recognition of this fact means that phosphorus fertilizers can be applied more effectively in order to enable farmers to continue producing maximum yields of alfalfa on these soils. Similar studies are under way with reference to available potassium.

The Oklahoma station has been studying the extent to which dehydrated alfalfa meal can replace cottonseed meal as a protein supplement for fattening steer calves. It has been used in tests at ¼ to ½ and full replacement of cottonseed meal. The calves fed alfalfa meal made slightly better gains than those fed cottonseed meal, and sold at a slightly higher price, but made a slightly lower net return per steer. The experiment is being repeated, with additional lots fed a carotene concentrate and the ash from alfalfa hay.

Low hatchability of eggs is still a serious problem for many turkey growers. The Texas station has been studying the value of dehydrated alfalfa meal as a source of unidentified factors which presumably reduce embryonic mortality in turkey eggs. It is planned to extend the studies to include growing poults.

Other Projects Under Way

In addition to these projects sponsored by the ADA, several stations are working on projects which concern alfalfa in other ways. New varieties are constantly being developed and tested for resistance to specific diseases and parasites, and for qualities which are important in maintaining stands. The specific fertilizer requirements of alfalfa on various soil types are being widely studied.

The nutritive value of alfalfa cut at different stages of growth is still not entirely understood, nor is the exact nature of the growth-promoting factor or factors, or the factors which prevent maximum rates of growth when alfalfa is fed at high levels. The place of dehydrated alfalfa in range pellets for cattle and sheep has been well established, but there are indications that it has values for this purpose which have not been fully realized.

Entomologists are continually searching for new and better ways of controlling insect pests which attack alfalfa and reduce yields. They must also find the best time for applying insecticides, not only to control insect pests, but also to interfere as little as possible with honey bees which are essential for pollination. All of these research studies add to the background of information which helps to stabilize the business of alfalfa dehydration.

ADA OFFICIALS

(Continued from page 1a)

Co., Modesto, Cal.; Dr. H. E. Bechtel, director, Larro Research Farm, General Mills, Inc., Detroit; Dr. R. V. Boucher, department of agricultural and biological chemistry, Pennsylvania State College, State College, Pa.; Dr. L. C. Cunningham, Prof. of Farm Management, Cornell University, Ithaca, N.Y.; Dr. E. F. Frolik, chairman of the department of agronomy, University of Nebraska, Lincoln; Dr. H. O. Graumann, Research Agronomist, U.S. Department of Agriculture, Beltsville, Md.; Dr. J. W. Hayward, director of nutritional research, Archer - Daniels - Midland Co., Minneapolis; Dr. George O. Kohler, vice president and director of research, Cerophyl Laboratories, Inc., Kansas City; Gordon Lindl, engineer in charge of the dehydrator division, The Heil Co., Milwaukee; Dr. W. Dayton Maclay, head of the biochemistry division, Western Regional Research Laboratory, USDA, Albany, Cal.; Dr. F. W. Quackenbush, head of the department of agricultural chemistry, Purdue University, Lafayette, Ind., and H. C. Schaefer, manager of the nutrition research laboratory, Ralston Purina Co., St. Louis.

A joint meeting of the two groups will take place at noon in the Green Room. In the afternoon separate meetings will again be held. At 4:30 p.m. a cocktail party for the board and council members and their wives will be given in the Green Room.

BENEFITS OF ALFALFA SOILS

According to a report from the North Carolina Agricultural Experiment Station, the yield of corn in that state shows wide variation, depending on what crop precedes the corn. Results: Following alfalfa 115 bu. per acre; following lespedeza 48 bu. per acre; following no legume 25 bu. per acre.

SULFUR TREATMENT

Alfalfa has responded to sulfur treatment on some soils in several different states, by showing increased root development, better color, higher levels of chlorophyll and heavier yields.

Planning IMPROVEMENTS?
Need REPAIRS and PARTS?

Use "WILLIAMS WAY SERVICE"

Quick Shipments from THESE "IN STOCK" ITEMS

☐ Wire Sifter Cloth, Complete Stocks
☐ Tinned Mill Screen
☐ Tuf-Tex, Dur-Loy, Stainless Steel in finer meshes
☐ Belting ☐ Buckets

Get our prices and shipping schedule on Transmission Equipment and Feed Mill Machinery

Check Your Needs for — Belting — Wire Cloth Elevator Buckets Hammers and Screens Repair Parts

Since 1905 Everything for Your Mill and Elevator

H. R. WILLIAMS MILL SUPPLY CO.
1320 Main Street Phone Victor 3232 Kansas City, Mo.

INDUSTRIAL MOLASSES CORPORATION
MIDWEST DIVISION

THE ONLY MOLASSES SOURCE with THE FOUR SERVICES YOU WANT MOST

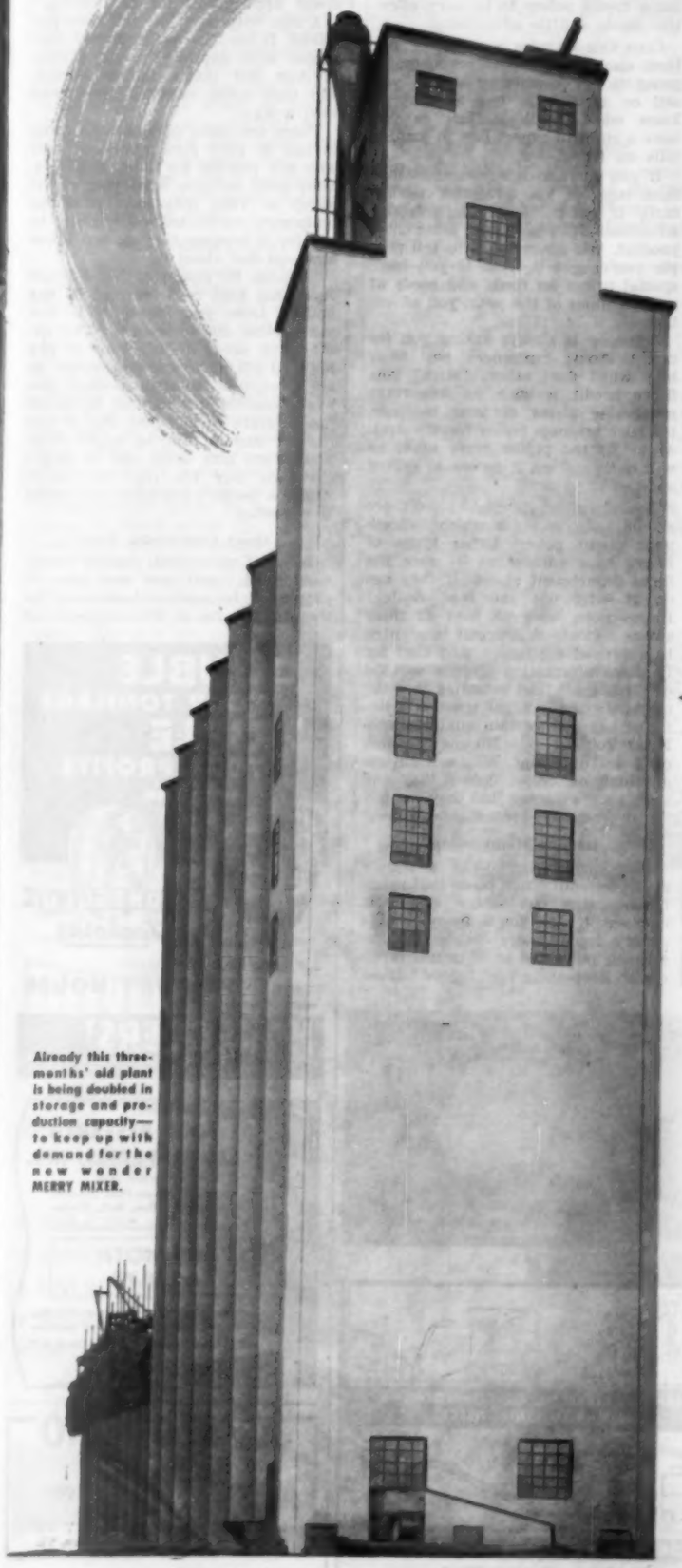
- 24 HOUR DELIVERY to any users of molasses.
- A GUARANTEED year 'round supply of molasses. No seasonal delays.
- SPECIFIC ANSWERS to users' technical problems. Regular service and suggestion bulletins.
- AN EXCLUSIVE SOURCE of sugar beet pulp with service to meet customer's needs.

INDUSTRIAL MOLASSES CORPORATION
MIDWEST DIVISION
5009 EXCELSIOR BOULEVARD MINNEAPOLIS 16, MINN.
TERMINALS: SIOUX CITY • SAVAGE • MUSCATINE • CHICAGO
NEW ORLEANS • AND OTHER STRATEGIC POINTS

MEET "MERRY MIXER" *

* NEW TYPE ALFALFA

◄FROM OUR BRAND NEW PLANT



Already this three-months' old plant is being doubled in storage and production capacity—to keep up with demand for the new wonder MERRY MIXER.

* *BETTER DISPERSION!*
* *DUST-FREE!*
* *FREER FLOWING!*
* *MORE UNIFORM!*

NOW, from the world's first plant designed specifically for inert-gas storage and processing of alfalfa pellets comes this new wonder, MERRY MIXER, composed of finely textured greenules. It's easier to mix, easier to handle—every time!

Just the *right sized greenules* of vitamin-rich alfalfa —to give better dispersion, greater uniformity in texture and color. More dust-free, far easier flowing, than any meal you've ever seen before!

MERRY MIXER is quality-checked, quality-controlled, all the way. Next time you order, get the newest. Specify easier-to-handle greenules, offered only in Emerald Brand's MERRY MIXER.

EMERALD BRAND ALFALFA

"The Gem of Alfalfa Products"

CONSOLIDATED BLENDERS

INCORPORATED

Fremont, Nebr. • Phone Fremont 3555

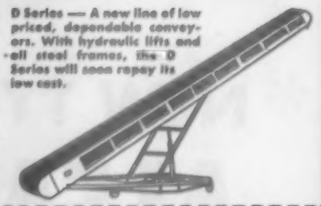
cut those handling costs the easy way with

ELTON CONVEYORS

A complete line of conveyors to fit your particular need. Time tested and sturdily built, Elton Conveyors will give you years of trouble free service.

Handi-Veyor — A new line of portable lightweight conveyors with detachable drive units. An ideal conveyor for both truck and warehouse use.

D Series — A new line of low priced, dependable conveyors. With hydraulic lifts and all steel frames, the D Series will soon repay its low cost.



Stationary Conveyors — Recommended and widely used for conveying sacked material from floor to floor as well as horizontally.

WRITE FOR THE NEW ELTON CATALOG FOR MORE COMPLETE INFORMATION.

This Catalog is now being prepared and will be available shortly. Be sure you get your name on the mailing NOW!

CHANTLAND MFG. CO.
BADGER, IOWA

Establish a Credit Policy and Stick to It

By Albert Vorst

Do you have a credit policy in your feed business? If you have, do your customers and prospects know what this policy is? It all depends on you, for a credit policy to be very effective needs a little advertising.

Does this surprise you? It needn't. How else is a prospect or customer going to know whether or not you sell on credit. He has a right to know what you'll do, just as you have a right to expect him to pay his bills on time.

If you want to sell feed and other farm supplies, you advertise consistently. If you put on a sale, you also advertise. If you stock some new product, you advertise it to tell people you've got it. And if you have special prices on feeds and seeds at certain times of the year, you advertise.

Someone is always asking you for credit. Some customers pay their bills when due; others "stick" you. Since credit is such an important continuing phase of your business, it's wise business policy for the dealer to let the public know what he will not do when it comes to selling on credit.

In and around your feed store there should be some signs which indicate your credit policy. Other types of stores have such signs — even the large department stores. If they can do it—why not the feed dealer? Please note, however, that all these stores indicate that credit is granted to approved customers, and that for further information "apply at the credit office." That indicates that the customer does not get the credit until he has met certain qualifications. Fair? You bet it is. No one can kick on a deal like that. Why sell anyone anything on credit unless they can show some evidence that they can pay for it when the proper time comes?

Bureau Membership

Are you a member of a county credit bureau? Then place that membership sign out where customers can see it. Are you a member of a county feed dealers club which has recently published an ad urging farmers to keep their credit good? If so, post that ad where prospects and customers can see it. If you do, you'll be protecting yourself.

"Do you want credit? We have credit applications for the asking."

A sign with copy like this does not offend. It invites—but it invites only people with approved credit rating. It does not invite the deadbeats, and they know it when they read such a sign.

There are many persons who come to buy at your feed store and mill who are looking for signs like this. They want to know what your credit policy is. They may have need for temporary credit, but are hesitant to ask for it because they do not know how you feel about it.

Suppose, for example, that Farmer Jones has paid cash for feed he has bought from you for quite a few years. Now, due to one reason or another, he needs a little time to pay his feed bill. If he knew—through an ad, a sign or something—that you would consider his request, he would not hesitate to ask you. But if you haven't such a sign, he might think you'd turn him down and he might even go buy his feed elsewhere, where a dealer advertises that credit is extended.

Good Customers, Too

Some of your good, regular customers need credit now and then. It should not be made embarrassing for them to ask for it. But on the other

We have . . . Ray Ewing PERFORMANCE PRE-MIXES

Distributed in Minnesota, North and South Dakota and Western Wisconsin by:

Blomfield-Swanson

6009 Wayzata Blvd., Minneapolis 16, Minn
Phone: ORchard 5-8805

DOUBLE YOUR TONNAGE
TRIPLE YOUR PROFITS
with the big 3

BIG-H FEEDS
HONEGGER Leghorns

and the Honegger POULTRY HOUSE

WRITE PHONE WIRE
HONEGGERS'
FAIRBURY, ILL. MANSFIELD, OHIO
FORREST, ILL. ATHENS, GA.

LOADING CYCLONE RETARDING GRAIN FLOW

YOUR GRAIN moves like the wind with the

New 900 SUPER VAC-U-VATOR

to or from FLAT STORAGE economically!!

The newest—easiest and most economical method of conditioning and moving grain from flat storage with no grain damage. Fully portable and a one man operation. The revolutionary Vac-u-vator will transfer grain 300 feet entirely by air flow without damage. Capacity—Corn, Oats, Barley 1200-1600 Bu. per hour. Wheat, Soybeans 800-1200 Bu. per hour. Rice 1200-1400 Bu. per hour.

Write for further information

DUNBAR-KAPPLE, Inc. Geneva, Ill. VAC-U-VATOR DIVISION

Minneapolis Office 4116 Garfield Ave. So.
Locust 6423 Minneapolis, Minn.

TURNING, CLEANING OR CONDITIONING GRAIN—REMOVING INSECTS

LOADING BUILDING WITH VAC-U-VATOR

LOADING CAR OR TRUCK WITH VAC-U-VATOR

FOOD RESEARCH LABORATORIES, INC.
Founded 1922
Philip B. Hawk, Ph.D., President
Bernard L. Oser, Ph.D., Director
Research • Analyses • Consultation

ANTIBIOTIC ASSAYS

Biological, Nutritional, Toxicological Studies for the Food, Drug and Allied Industries
48-14 33rd Street, Long Island City 1, N. Y.

Sell STONEMO
The GRIT with the Extra Grinding Surfaces
STONE MOUNTAIN GRIT CO.
Lithonia, Ga. Barre, Vt.

In Canada it's . . .
N. D. HOGG, LTD.
Feed Ingredient Merchants
1554 Yonge Street
TORONTO

hand, your credit policy should be such that it screens out the dead beat. Don't let him take feed out of your yard without paying. Make him run the gauntlet of credit applications, bank references and credit bureau checking before you let him take that feed. You'll win more than you lose in the long run. If you lose a customer like that, you haven't lost much, for he's a credit risk and you may spend a lot more money trying to collect from him than you'll make on your sales to him.

I can see no reason why a feed dealer can't publish an ad now and then to let the entire trade territory know what his credit policies are. I think that farmers want to know this. If the dealer requires a credit application to be filled out, say so in the ad. Other merchants do. If you have talked with your local bankers about financing feed sales, say so. Show the farmer that bankers are willing to lend money for purchase of needed feed.

Others Have Policy

One fact which many dealers forget is that the farmer buys from many other merchants in the area—the clothier, appliance dealer, furniture dealer, department store—and at all these stores when the farmer buys on credit, he does so on a definite payment agreement. The farmer is now accustomed to paying his bills on time. Why should the feed dealer continue to upset the credit applecart in his area by selling farmers feed with little or no credit arrangement? What is the farmer going to think about the dealer, if laxity in credit arrangements are the rule? The farmer will naturally think (and who can blame him), "These other merchants are tough on credit deals. I'll have to pay them on time. But if I get hard up, I can always let the feed dealer wait. He doesn't seem to worry too much about whether I can pay or not. All he wants to do is sell."

Some dealers consider an account delinquent when it runs 45 days without payment. Other dealers say 60 days constitutes a delinquent account. Still others have told me they never swing into collection action until an account is 90 days old, and they say they are solvent, because only a small fraction of accounts get that old.

So there is no agreement among feed dealers as to when an account becomes delinquent, but there can be one mutual agreement among them; namely, to take some steps to protect their investment in feed by making quite certain that the customer to whom they are going to give credit is worthy of it. This is the least the dealer can do. To do any less is to hold the door open wide, night and day, and invite all deadbeats to come in and help themselves.

B. D. Eddie Reelected

OKLAHOMA CITY—B. D. Eddie, president and manager of the Superior Feed Mills Co., has been reelected to a two-year term as director of the Oklahoma City Chamber of Commerce.

NEW CONSTRUCTION

SHENANDOAH, IOWA—A warehouse has been constructed by the Ted Smith Feed Store at its new location here at Southwest Road and 7th Ave. So.

● INCREASE FEED SALES!
● GET MORE REPEAT SALES!
● SATISFY MORE CUSTOMERS!

FEED MANUFACTURERS EVERYWHERE ARE DOING THIS WITH...

JERSEE VITAL-MIN

Here is a top quality Multi-Vitamin Pre-Mix containing all the necessary Vitamins, Amino Acids, Trace Minerals to make your feeds produce better results. The fast growing trend is towards Hi-Potency Vitamin Fortification. Successful Feed Builders are increasing sales, getting more repeat orders and developing greater customer satisfaction with JERSEE VITAL-MIN. They have relied on JERSEE . . . builders of Vitaminized and Mineral Concentrates for more than 25 years.

★ *Successfully Serving Feed Manufacturers from Coast to Coast.*

THE JERSEE CO.

JERSEE
VITAL-MIN
a Pre-Mix
VITAMINS MINERALS

Write today for Dealers Sales helps
MINNEAPOLIS
MINNESOTA

"If the Skies Fall, One May Hope to Catch Larks"

But when you order Multiwalls from the completely integrated Albemarle operation you do not have to depend upon *miracles* for superbly printed, superbly made sacks in *any* quantity you desire.

FOR Multiwall CALL Albemarle

ALBEMARLE PAPER MANUFACTURING COMPANY • RICHMOND, VIRGINIA

EASTERN SALES OFFICE: NEW YORK CITY • SOUTHERN SALES OFFICE: BALTIMORE, MD. • MIDWEST SALES OFFICE: CHICAGO, ILLINOIS

BOXER BRAND INGREDIENTS MADE SPECIALLY FOR DOG FOODS

- CORN FLAKES
- WHEAT FLAKES
- CORN MEL-O-KERNELS
- WHEAT MEL-O-KERNELS
- SOY CAKE-LETS (Expeller Process Chips)

PURE COOKED TOASTED

FROM ONE SOURCE
CARS, MIXED CARS & L.C.L.

RALPH WELLS & CO.
MONMOUTH, ILLINOIS

Be sure to see the KELLY DUPLEX ad next week

NEW HYDRAULIC BULKMASTER increases feed tonnage because it Loads - Unloads - FASTER, EASIER

8-ton Bulkmaster with high vertical auger -- one of several in use by General Mills.

HERE'S bulk feed delivery at its best — "smooth as silk" operation with full hydraulic controls on the wide 36" conveyor, and on the auger discharge — even to raising and lowering the final discharge auger — all from one convenient location. Now it takes less "set-up" time for your operator, and less time to unload, thus more tonnage hauled per day.

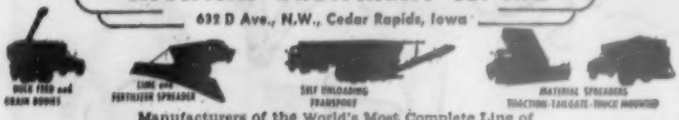
There is a size and type Bulkmaster for every need — from 3 to 20 ton capacity; straight power take-off mechanical drive, separate gas engine, or the new hydraulic operation. For discharge heights over 20', air unloading is available.

Whether you've joined the 'swing toward bulk' or making plans to do so, it will pay you to investigate the NEW LEADER Bulkmaster — the best known and most widely accepted name in the feed industry.

Write today for Bulletin HE-954

HIGHWAY EQUIPMENT CO. Inc.

632 D Ave., N.W., Cedar Rapids, Iowa



Manufacturers of the World's Most Complete Line of Spreaders and Bulk Delivery Equipment

VERSATILE BULK FEEDING... from a *trickle* to a *torrent* with VELOFEEDER

A mechanical vibrating feeder especially designed for grains, cubes, pellets, poultry and cattle feeds and similar materials at lower cost, higher efficiency.

Here's Why!

Higher Output—300 to 50,000 lb./hr. hard granular materials; 300 to 30,000 lb./hr. soft ground materials.

Lower Power Needs—⅛ hp. motor powers unit—inexpensive as a 100-watt light bulb!

Smaller Space Needs—35 inches long, 17½ inches wide, 19 inches high. Standard vibrating tray 16 inches wide—stainless steel when required.

Easier Control—simple adjustment over wide operating range (near 0 to 50 fpm. max.).

Safer Operation—motor is explosion-proof (Class 2, Group G), where hazardous conditions exist, at slight extra cost. Complete dust enclosure on application.

Less Vibration—working frequency is 1850 vibrations per minute; little or no vibration is transmitted to mounting installation (mounts with only 4 bolts!).

If you're interested in better bulk feeding at lower operating cost, write for Bulletin 5302 with complete specifications and drawing.

Richardson SCALE COMPANY, Clifton, New Jersey

Atlanta • Boston • Buffalo • Chicago • Detroit • Houston • Memphis • Minneapolis • New York • Omaha • Philadelphia • Pittsburgh • San Francisco • Wichita • Montreal • Toronto • Havana • Mexico City • San Juan

MATERIALS HANDLING BY WEIGHT SINCE 1902

LA BUDDE

MILWAUKEE, WIS.

MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

Would Help Feed Business

Increase in Milk Sales Seen With Quantity Discount Pricing

Many feed men manufacturing or distributing dairy feed are interested in ways in which the dairy industry can step up milk consumption, and thereby bring about an improved market for feeds.

A study made by the agricultural economics department of the University of Minnesota lends further basis to the belief that more milk can be sold with effective quantity discount pricing to the consumer.

Information on actual pricing in Minneapolis, a survey in Minneapolis and experience with a new pricing system in Des Moines are reported and indicate the possibility of boosting milk consumption with quantity discounts.

The authors of the Minnesota report, John D. Heimberger and E. Fred Koller, noted that many persons regard the current widely used uniform price plans as a major deterrent to larger milk consumption. The Minnesota research indicates that a substantial increase in efficiency of milk production would result if customers were offered relatively large quantity discounts. This increase in efficiency could be reflected in lower consumer prices and increased consumption of milk.

Best Discount Plan

One of the methods of quantity discount pricing is charging a higher price for the first quart in a delivery than for additional quarts. And the Minnesota economists regard this type, which makes the price depend on the size of each individual delivery, as the most logical type. The customer in this case is encouraged to take delivery no more frequently than needed since prices are lower with larger deliveries.

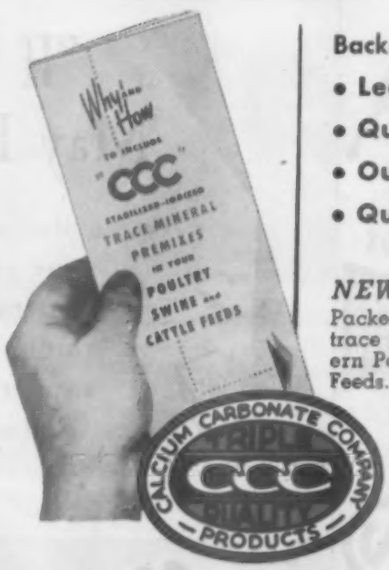
The prevailing practice in urban milk markets is to charge a uniform price per quart whether the customer takes one quart or several at a delivery. This discriminates against the large volume customer and subsidizes the small volume customer. The result is that small volume customers are attracted to home delivery routes while profitable, large volume customers are gradually lost. The cost of delivering milk, a very substantial part of the cost of the milk, is practically the same for several quarts as for one quart.

Most markets which have quantity discounts base them on monthly purchases or sales in multiple quart containers. Minneapolis is one of the few markets giving discounts on the basis of size of delivery. Currently prices for regular milk are 21¢ for the first quart in a delivery and 17¢ for each additional quart. Early in 1954 the University of Minnesota undertook a study to determine the

Experienced Feed Makers Specify

"CCC"

TRACE MINERAL PREMIXES



Backed By—

- **Leadership Research**
- **Quality Control**
- **Outstanding Facilities**
- **Quick Service**

Write for NEW DATA BULLETIN

Packed with latest information on trace minerals in building modern Poultry, Swine and Cattle Feeds.

Remember, too, "CCC" can supply your most exacting need for CALCIUM of all kinds... as well as FARM-CAL (Barnlime) for Farms and Gardens.

WRITE, WIRE OR PHONE

Calcium Carbonate Company

"Pioneer Producers of Trace Elements Products"

222 WEST ADAMS STREET • CHICAGO 6, ILLINOIS

825 WOODMEN OF THE WORLD BLDG., OMAHA, NEBRASKA • BOX 409, CARTHAGE, MISSOURI

Our New Self Feeding POULTRY GRIT UNITS PROVING POPULAR They Step-up PROFITS

Our new 25-lb. GRAN-I-GRIT Self-Feeding Feeder Pack SAVES Dealers and Jobbers time, labor, handling heavy bags and valuable warehouse space.

GRAN-I-GRIT

THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT

Nationally Advertised

GRINDS FEED FINER

GRAN-I-GRIT, with its sharper grinding edges, grinds feed finer in the gizzard. Finer grinding of feed releases more nutrients from the grains and grasses that birds consume.

BETTER USE OF FEED

Because GRAN-I-GRIT releases extra nutrients from feed, layers get more body-building nourishment. They grow into big, strong pullets with less feed. They produce the same number of eggs with LESS FEED AND WITH LESS COST.

USED BY LEADING POULTRY BREEDERS

Leading poultry breeders and top commercial egg producers use and recommend GRAN-I-GRIT. They know GRAN-I-GRIT helps to improve liveability of chicks, growing stock and layers . . . speeds up growth of broilers . . . helps layers produce eggs with less feed. Unbeatable where birds are separated into breeding pens.

GET FULL FACTS

Write for our new Free GRAN-I-GRIT booklet that tells how GRAN-I-GRIT saves and makes poultry raisers money. Its use stimulates grit sales. Also full details on retail and jobber opportunities.

NORTH CAROLINA GRANITE CORPORATION
MOUNT AIRY, NORTH CAROLINA

desirability of increasing the size of the discount.

The average cost of making a delivery was found to be 24.72¢ for the period 1952-53. The delivery cost per quart averaged 6.47¢. The delivery cost per quart falls as the size of the delivery increases.

Inadequate Discount

While Minneapolis has one of the largest quantity discounts, it was found to be inadequate. The difference in average prices per quart charged one-quart customers is 3½¢ while the difference in delivery costs per quart is 20.6¢. While it might not be feasible to make the differential as large as the cost of making a delivery, it might be feasible to make it considerably larger than the current 4¢ per quart, the Minnesota economists said.

A survey of Minneapolis homes was made to determine consumer reaction to a 10¢ per quart quantity discount. A price of 25¢ for the first quart and 15¢ for all additional quarts in a delivery was proposed. About 70% of the consumers interviewed preferred a 10¢ differential to the then existing 2¢ differential. Only 12% opposed the larger discount while 18% had no opinion. Of the consumers who were buying milk from retail routemen, 72% favored the larger discount. Of those who bought four quarts or more at a time, 86% favored the 10¢ discount.

The survey indicates use of a 10¢ differential would increase both the customer and sales density on retail routes. Consumers were asked where they currently bought milk and where they would buy it if a 10¢ differential were used. Analysis of replies indicates the number of consumers who would buy milk at the doorstep would increase 4.1%. The number of one-quart consumers would decrease 23% while the number of larger volume customers would increase more than enough to offset this drop. The average size of delivery would increase from 3.38 to 3.75 quarts.

The volume of milk bought by those who indicated they would buy milk on retail routes under the 10¢ discount would be 15.2% larger than the volume bought by those currently on retail routes. This assumes consumption remains the same. Actually, sales to home delivery customers can be expected to increase more than 15.2%. Many would increase their purchases because they could buy at lower prices by taking larger deliveries.

In July, 1954, a Des Moines milk company started a 10¢ per quart quantity discount plan, charging 26¢ for the first quart in a delivery and 16¢ for additional quarts. During the third month under this price plan, milk sales on their routes were 13% higher than the month before the plan was started. In the same three months a year earlier, sales increased only 1%. The 13% increase in Des Moines corresponds closely with the 15.2% survey estimate for Minneapolis.

Some milk route drivers fear that under such a plan the number of customers served per day might decrease and result in fewer delivery jobs. However, under this plan the trend toward fewer home delivery sales and more store sales may be slowed down or reversed, and then deliverymen would be more secure and there might be more jobs.

it PAYS to MIX with
MARION
Heavy Duty
MIXERS
Write for Circular
For Wet and Dry Materials — Fertilizer, Molasses Feeds, Alfalfa Blending, etc.
RAPIDS MACHINERY CO.
Box 88, Marion, Iowa

Cottonseed - Soybean Products

MEAL • CAKE • PELLETS • COTTONSEED HULLS • PEANUT MEAL

THE HEYMAN COMPANY
INCORPORATED
Domestic Export Merchants
915 FALLS BUILDING, MEMPHIS 3, TENN.

Members:
Nat'l Cottonseed Products Assn.
New Orleans Board of Trade
Memphis Merchants Exchange

E. C. ARNN
Domestic Manager
Export Office: 510 Bayou St., New Orleans

Telephones:
38 - 2588
38 - 2589
WESTERN UNION

THE TRUE STORY OF CITRUS PULP

Why is Florida Citrus Pulp causing so much talk among dairymen today? The answer is simple. More dairymen are feeding Citrus Pulp and finding out the true facts about it. Florida Citrus Pulp is a carbohydrate concentrate, high in T.D.N.* and low in fiber content. It has proven milk stimulating factors and will not affect milk flavor. It can be fed wet or dry, stores well and is available all year round. Facts prove you get better milk production at lower cost by feeding Florida Citrus Pulp.

*Total Digestible Nutrients

For complete information, write for our free booklet "How to Feed Citrus Pulp." Please include your feed dealer's name and address.

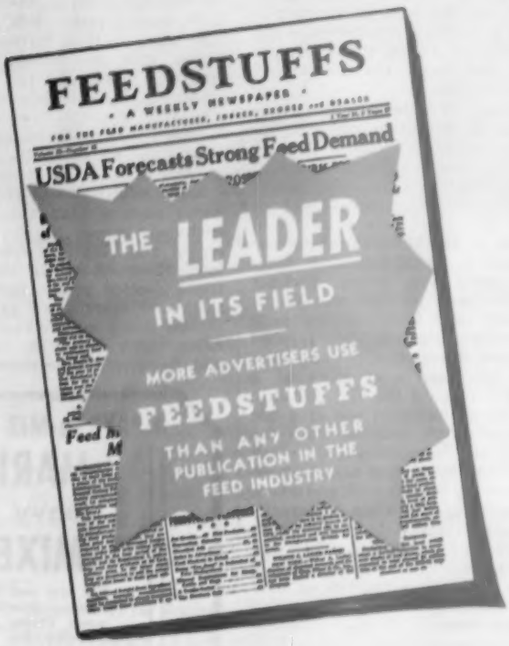
FLORIDA CITRUS PULP

CITRUS PROCESSORS ASSOCIATION

NAME
ADDRESS
DEALER
ADDRESS

P. O. Box 403 Dept. H Tampa, Florida

there is only 1 NEWSPAPER



Serving the $4 Billion Formula Feed Industry

As a result FEEDSTUFFS is:

- No. 1 in Reader Interest
- No. 1 in Reader Preference
- No. 1 with Advertisers

Feedstuffs Is the Weekly Newspaper of the industry with a distinctive newspaper format; the other publications in the field are monthlies with a conventional magazine approach to editorial content. An experienced, alert editorial staff, a Washington correspondent of recognized authority and branch offices in four important cities combine to give the industry accurate, thorough *news* coverage in FEEDSTUFFS. The paper is mailed second class, with newspaper handling privilege. It is the only paper in the field that is eligible for this prompt delivery. Readers receive FEEDSTUFFS while the news is still fresh and of value to them. Feed men have learned to depend on FEEDSTUFFS for the news and information they need in the operation of their business.

The Point of All This, to an advertiser, is that FEEDSTUFFS offers not only wide circulation but extraordinarily high reader interest, prompt readership and recognized prestige.

Advertisers Acknowledge This Leadership

More advertisers (a total of more than 350 currently) use FEEDSTUFFS than any other publication in the field. FEEDSTUFFS carries more advertising lineage by far than any other publication in the feed industry.

For further information . . .

Write for FEEDSTUFFS new Market Data Presentation on the Formula Feed Industry. It contains data essential to every advertiser interested in reaching the feed industry market.

THE MILLER PUBLISHING CO.
The Businesspaper Family Serving the Fields of Flour, Feed, Grain, Baking and Agricultural Chemicals
THE NORTHWESTERN MILLER • FEEDSTUFFS
THE AMERICAN BAKER • MILLING PRODUCTION
CROPLIFE

FEEDSTUFFS

2501 Wayzata Blvd., Minneapolis 5, Minn.
BRANCH OFFICES: New York, Chicago, Kansas City, Toronto

Knock On Every Door In 1955

By Edward Ritter

IF THERE is one thing which every sensible feed dealer knows it is that the coming year will be no year to sit around the feed store and mill when trade sags and moan, "I wish business was better. I wish I could do something about it."

Times change, but no matter what economic conditions may be, opportunity will ride in the front seat of any feed merchant's car or truck if he will but do his share. There are millions of extra sales which feed dealers can make in 1955, if they will do their part. That part is making intelligent daily use of every moment you have and training your employees in the same attitude.

The other day I read an appliance magazine and the headline of an article said, "Knock on Every Door in 1955," and the article said that by this practice, especially in farm areas, could extra sales be made.

A lot of people are going to be knocking on farm doors this year, trying to sell this and that and practicing their sales lures. Are you also going to be knocking on farm doors, or are you going to stick at your feed store and mill, relying on advertising, customer satisfaction and old habit patterns to do a satisfactory selling job for you? That is a decision which you will have to make in 1955 and the decision you make can well affect your business very much.

Why, a dealer may ask, should a feed dealer visit farmers and try to sell more feed and farm supplies, when the farmers' income is lower and he is going to resist every effort to sell him more merchandise?

On the face of it, this is a formidable question. But when you analyze it, then it is not too big an obstacle to overcome. Why?

The average farmer today, in practically every state in the nation is doing some thinking. He is trying to arrive at a number of important decisions. Should he buy or not buy and raise more chickens and turkeys? Should he diversify more than he has? Should he invest more money in fertilizer? Should he raise more or less beef cattle? Should he in-

Sell the BIG value! PREMIER Peat Moss

Poultrymen who try Premier keep buying it, because Premier is the *BIG value* litter that absorbs up to 20 times its own weight in moisture—*four* times as much as other material. It saves time, money and chicks. Sell Premier—from world-wide resources. Write for dealer helps and full details.

Premier Peat Moss Corp., 535 Fifth Ave., New York 17, N. Y.

Burlap or Veneer — Premier is the BIGGEST selling brand — All Plastic

TRY OUR NEW
Potomac Oyster Shell
FOR POULTRY

POTOMAC

Short of Warehouse Space ..... Try Our Truck Loading Service

POTOMAC POULTRY FOOD
802 KEYSER BLDG.
BALTIMORE 2, MD.
LEXINGTON 9-0774

HAMMOND Multi-Wall PAPER BAGS
HAMMOND BAG & PAPER CO.
General Offices: Wellsburg, W. Va.
Plants in Wellsburg, W. Va.
Pine Bluff, Ark.; Charlotte, N. C.

Hoffman means

Quality products

Competitive prices

Complete stocks

Same-day shipment

Hoffman specialties

Choline Chloride *25% on cereal carrier or carrier of your choice*

Choline Chloride *70% aqueous solution (non-corrosive)*

Calcium Pantothenate-*Racemic*

Samples and prices available on request

For your library, write for your copy of Technical Bulletin No. 102, "Choline, its applications in Medicine and Animal Nutrition."

Hoffman-Taff Inc.
Manufacturing Chemists
BOX 1614 S.S.S. • SPRINGFIELD, MISSOURI

crease or decrease his dairy herd, etc.?

And one question which always bothers farmers, and which occupies much of their thinking is, "How can I cut my costs?"

Trained, Reliable Dealer Can Help

The reliable, trained feed dealer is the man who can help the farmer with some of these problems. He can talk the problems over with the farmer when he visits him, while he sits at the farmer's kitchen table perhaps and has a mid-morning cup of coffee with him. The feed dealer who knows the answers can help that farmer set up his farm management program on a more profitable basis, and he will also sell more merchandise when so doing.

And the farmer wants this help—from anyone who can give it, whether the giver is a county agent, feed dealer or banker. The source is not too important, just so the advice is sound. And who has better training along these lines than the reliable, informed feed dealer?

When the feed dealer shows a farmer that through culling, better breeding, feeding and more efficient equipment and marketing he can reduce his costs per bird and make more profit, he is helping that farmer immensely and also setting up a better customer for his feeds. When the feed dealer works out a better water system outlet program for dairy barn, poultry house and hog and beef lot watering, he helps the farmer tremendously. Livestock and poultry then get all the water they need when they want to drink it, thus utilizing their quality feed to the maximum. Not only that, but through this better water arrangement, the dealer saves the farmer steps and time which he can use profitably at some other farm task.

$10 a Month Savings Important

Being an informed outsider, the feed dealer is in an excellent spot to see faults and remedies in many farm operations. "A $10 a month cost saving on some item or method of work is worth $120 a year to a grateful farmer. It will help him meet the challenge of the time.

When boom times were running with the tide, farmers did not care too much if they got this type of service from feed dealers or not, because income always balanced outgo and exceeded it by a comfortable margin. But now that we have a buyer's market, farmers need this advice service more than they have needed it in several decades. They want it, and wise is the feed dealer who sets out to supply it.

I have visited hundreds of feed-dealers in seven states in recent years, and I have always been impressed by the reluctance of the majority of those dealers to get out and visit the farmers. Most dealers have told me they have too many "other duties" to do extensive visiting with customers on their farms. Yet during the same periods, salesmen and other retailers in other fields have been knocking on farm doors and reaping a golden harvest. I believe it is time that alert feed dealers realize and grasp the opportunity which lies at their doorstep—to become the No. 1 salesmen in rural areas. One could not expect a jeweler, for example, to visit farmers trying to sell more jewelry. It just isn't done, and farmers don't expect it. But farmers do expect and want feed dealers to visit them and help them solve feed and management problems, and the dealer who does this is going to get much extra business.

Better feeding and better farm management, including savings that can be made through time and step saving procedures can cut farm costs tremendously and thus widen the profit margin even in face of declining prices, or stabilized prices at the present level.

Inefficiency

Farmers will not admit that many of them are inefficient operators. Too many have their eyes fixed on high prices for farm products. But if you study the farm operation reports, which are available through many colleges of agriculture, you will find wide variances in efficiency and profit between farms in the same county, with the same size farms, same size herds and flocks. Why? Management is the answer most of the time.

Management

Who can teach better management to the farmer? Declining prices can teach a great deal. So can county agents, feed dealers and others. If the farmers will listen, if they will test some of the recommendations given them, if they will allow an unbiased efficiency survey of their farm operations, then they will really have something into which they can sink their teeth in the way of cost reduction.

The feed dealer will not make himself unpopular by advocating more efficient farming. If he will just get out and talk with the farmer and honestly work to help him become a better operator, he long will be remembered and rewarded as a true business friend.

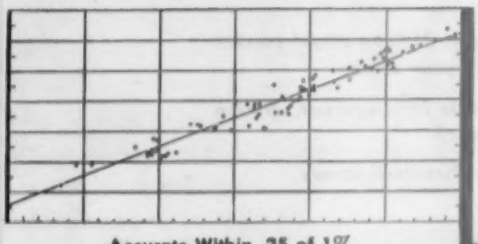
Knock on every farm door this year. It would be difficult to think of a better policy for any feed dealer.

KASCO PLANT BLAZE

TOLEDO, OHIO—Fire at the Kasco Mills, Inc., plant here caused slight damage to a roof.

NOW... make a 60 second moisture test on your GRAIN-FEED-SEED with a

new model 400G Steinlite MOISTURE TESTER



Accurate Within .25 of 1%
The extreme accuracy of the 400G Steinlite is a matter of record. Its continued reliability has been proved—with over 20,000 successful installations.

- **Easier to Operate**
  New dial-type selector switch gives immediate readings. Built-in thermometer assures proper conversions. Handy charts convert to final determinations—all in 60 seconds.
- **Trouble-Free Operation**
  Newly designed and strengthened chassis—double glass meter cover—stainless steel control panel . . . all make the new 400G the sturdiest and most dependable tester available.
- **Measure Entire Sample**
  By testing the whole sample, a more accurate moisture content of mixed moisture content grains can be determined.
- **Wider Moisture Range**
  Now you can make tests from 1½% moisture in peanuts to 45% in corn without readjusting the instrument in any way.

Money-Back Guarantee
The 400G Steinlite is guaranteed to perform as advertised, or your money back . . . and against defective parts and workmanship for a full year.

"World's Leading Supplier of Grain Testing Equipment for Over 40 Years"
SEEDBURO EQUIPMENT COMPANY

CUT TIME AND SAVE MONEY

SEEDBURO EQUIPMENT COMPANY, Dept. FS1
618 W. Jackson Blvd.
Chicago 6, Ill.

Please send me full information on the New 400G Steinlite Moisture Tester for Grains, Seeds, Mixed Feeds, Nuts, Meal, Flour and many other commodities of consistent chemical and Granular nature.

NAME_____
ADDRESS_____
CITY_____ STATE_____

FEEDAROMA
Smells good!
Tastes good!
Sells good!
LOW IN COST
write
FLAVOR CORPORATION OF AMERICA
3037 N. CLARK ST., CHICAGO 14, ILL.

W. H. NIGH & COMPANY
Grain Feed Ingredients
Rice By-Products
312 Oil & Gas Bldg. GE 9061
HOUSTON, TEXAS

Another New Sandman Pillowcase Bag!

YOU'LL HIT THE JACKPOT FOR THE THIRD TIME!

Sandman No. 1 made history . . .

it was the hottest selling bag in the feed and flour business. Mills that tried it ordered and re-ordered.

Sandman No. 2 kept the ball rolling.

Your customers found out how many interesting uses they could make of handsome Sandman prints.

and now . . . Sandman No. 3 tops them all

It's a beautiful design . . . and comes in five favorite color combinations. A bleached cambric, smooth and strong. Easily converted into pillowcases, aprons, dresses, etc., at less than half of store cost. WOMEN LOVE THIS BARGAIN!

Ask your Bemis Salesman to show you this new pattern.

Bemis

BEMIS BRO. BAG COMPANY

General Offices—St. Louis 2, Mo. • Sales Offices in Principal Cities

Call
Van Dusen Harrington Co.
for Barley, Oats, Corn
BUSINESS FOUNDED 1852
MINNEAPOLIS Pv DULUTH

We have . . .
Ray Ewing
PERFORMANCE
PRE-MIXES
Distributed in Utah and Southern Idaho by:
BADER, INC.
214 24th Street
P. O. Box 267 • Ogden, Utah
Telephone: Ogden 9525

CONVENTION CALENDAR

Jan. 23-25—Indiana Grain & Feed Dealers Association, Inc., Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

Jan. 24-26—North Dakota Poultry Industries Convention; Elks Club, Fargo; sec., Irving J. Mork, Cooperative Extension Service, State College Station, Fargo, N.D.

Jan. 27—Nevada Feed Dealers Conference; U. of Nevada, Reno; Chm., Dr. J. F. Kidwell, University of Nevada, Reno, Nev.

Jan. 27-29—American Dehydrators Assn.; Broadmoor Hotel, Colorado Springs, Colo.; Exec. Vice Pres., Joseph Chrisman, Dwight Bldg., Kansas City 6, Mo.

Feb. 1-2—Utah Nutrition and Production Conference; Brigham Young University, Provo, Utah; sec., Lorin E. Harris, Utah State Agricultural College, Logan, Utah.

Feb. 6-8—Wyoming Grain, Feed & Seed Dealers Assn.; Townsend Hotel, Casper, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 7-8 — Grain Processing Machinery Manufacturers Assn.; Edgewater Beach Hotel, Chicago, Ill.; sec., Raymond J. Walter, 511 Fifth Ave., New York 17.

Feb. 11-13—Institute of American Poultry Industries Fact Finding Conference; Kansas City, Mo.; 221 North LaSalle St., Chicago 1.

Feb. 14-16 — Michigan Symposium "Nutrition of Plants, Animals, and Man"; School of Agriculture, East Lansing; Dir., L. M. Turk, Michigan Agricultural Experiment Station, East Lansing, Michigan.

Feb. 16—Mutual Millers and Feed Dealers Assn.; Hotel Statler, Buffalo, N.Y.; sec., Mrs. Gustavus A. Bentley, 41 Chautauqua Ave., Jamestown, N.Y.

Feb. 18 — Washington State Feed Assn.; Olympic Hotel, Seattle, Wash.; sec., John G. Wilson, 814 2nd Ave. Bldg., Seattle 4, Wash.

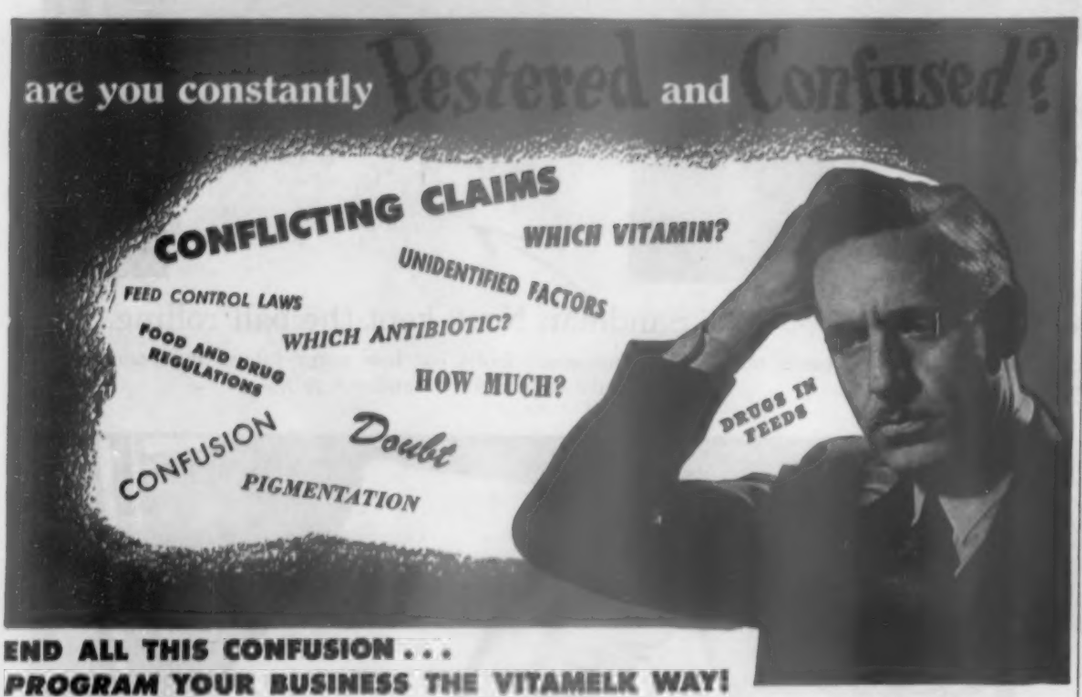
Feb. 20-22—Colorado Grain, Milling & Feed Dealers Assn.; Shirley-Savoy Hotel, Denver, Colo.; sec., Ralph Booze, 605 Mining Exchange Bldg., Denver 2, Colo.

Feb. 20-22—Ohio Grain and Feed Dealers Assn., Inc.; Deshler-Hilton Hotel, Columbus, Ohio; sec., H. Ralph Kagay, 65 N. Roys Ave., Columbus 4, Ohio.

Feb. 23-24 — Virginia Polytechnic Institute Nutrition School for Feed Men; Hotel Roanoke, Roanoke, Va.; chm., Prof. Paul M. Reaves, Virginia Polytechnic Institute, Blacksburg, Va.

Feb. 25 — National Feed Finance Credit Conference; Curtis Hotel, Minneapolis, Minn.; sec., Rupert Lindholm, 502 Thorpe Bldg., Minneapolis, Minn.

March 3 — Tenth Distillers Feed Conference; Sheraton - Gibson Hotel, Cincinnati, Ohio; exec. dir., Lawrence



END ALL THIS CONFUSION . . .
***PROGRAM* YOUR BUSINESS THE VITAMELK WAY!**

Is too much of your time spent with suppliers' salesmen? Trying to decide *which* among scores of conflicting "expert" recommendations is best for you? Are new nutritional discoveries, formula work, and fortification problems constantly claiming time you should be devoting to sales? They're probably taking far too much time unless you have an extensive professional staff and research facilities. But they shouldn't—and they needn't!

You can relieve yourself of these and other related problems through Dawe's famous Vitamelk program. Here's how it works!

Every user of Vitamelk has at his disposal, without cost, Dawe's feed engineering services. Dawe's Formula Audit Bureau will analyze your present feeds and provide you with exclusive new formulas to meet your special needs. It will take over the continuing responsibility for evaluating and applying the latest nutritional knowledge to your feeds. And, Dawe's Nutritional Information Service will regularly keep you informed of new scientific developments affecting your business.

Dawe's Quality Control Laboratory, Chemical and Biological Laboratories, Nutritional Research Department and Farm Research Station provide a wide range of other essential feed engineering assistance.

By fortifying your feeds with Dawe's Vitamelk, you simplify and improve your fortification. You enjoy the benefits of dealing with a basic producer of fortification factors. Vitamelk provides full fortification in one package . . . simplifies buying, storing and manufacturing . . . assures up-to-date practical fortification for each class of livestock and poultry feed.

This streamlined, "tailored to your needs" service program can relieve you at once of the day-to-day distractions that are robbing you of valuable time. Let Dawe's, the nation's leading vitamin nutritionists, prove to you the advantages of modern scientific feed building methods for your brand. You will be astonished how little it costs to put your problems in the hands of recognized specialists and get the help you need. Clip the coupon today.

Dawe's Laboratories, Inc.
1600 N. Richmond St., Dept. FS-15, Chicago 22, Illinois

Please send me full information about Dawe's Vitamelk Program and Feed Engineering Services.

NAME _____
FIRM _____
ADDRESS _____
CITY & ZONE _____ STATE _____

WORLD'S OLDEST AND LARGEST SPECIALISTS IN VITAMIN PRODUCTS FOR FEEDS

WISCONSIN ALUMNI RESEARCH FOUNDATION
LABORATORY SERVICES
PRACTICAL CHICK FEEDING STUDIES
DETERMINATIONS OF: Vitamin B_{12} • Antibiotics • Arsenicals
A.O.A.C. vitamin D_3 chick assays
U.S.P. vitamin D *rat* assays — results in 8 to 10 days
U.S.P. XIV or A.O.A.C. vitamin A assays
Other vitamin assays
Amino acid assays
Biological protein evaluations
Proximate analyses and mineral determinations
Other biological, chemical and microbiological services
PROJECT RESEARCH AND CONSULTATION
Write for price schedule
WISCONSIN ALUMNI RESEARCH FOUNDATION
P.O. Box 2059-N • Madison 1, Wis.

NELLIS
FEED COMPANY
Brokers
of Feed Ingredients
255 Board of Trade Bldg.
WAbash 2-7322
TWX 623
Chicago 4, Ill.

E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 3-5 — Montana Nutrition Conference; Montana State College, Bozeman; chm., O. O. Thomas, Montana State College, Bozeman, Mont.

March 14-16—Midwest Feed Mfrs. Assn.; Municipal Auditorium, Kansas City, Mo.; sec., Lloyd S. Larson, 20 W. 9th St., Kansas City.

March 14-16 — National Feed industry Show; Municipal Auditorium, Kansas City, Mo.; co-mgr., Eldon H. Roesler, 1712 West St. Paul Ave., Milwaukee.

Mar. 17-18 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Prof. G. L. Romoser, Poultry Dept., U. of Md., College Park, Md.

April 4-5—Texas Feed Mfrs. Assn.; Baker Hotel, Mineral Wells, Texas; exec. sec., W. B. Orr, Box 655, Bryan, Texas.

April 4-6—American Association of Feed Microscopists; Melbourne Hotel, St. Louis, Mo.; Sec., Clarence Roelle, Kasco Mills, 2000 West Central Ave., Toledo 6, Ohio.

April 7—Ill. Swine Growers Day; U. of Ill., Urbana; chm., S. W. Terrill, Dept. of Animal Science.

April 21-23—California Hay, Grain & Feed Dealers Association; Fairmont Hotel, San Francisco, Cal.; chm., Terry Coonan, 1400 10th St., Sacramento 14, Cal.

April 22-23—Texas Grain and Feed Dealers Assn.; Baker Hotel, Dallas; Sec., Ben M. Ferguson, 614 Meacham Bldg., Fort Worth, Texas.

Apr. 29 — Indiana Cattle Feeders Day; Purdue University, Lafayette; Sec., W. M. Beeson, Department of Animal Husbandry, School of Agriculture, Purdue University, Lafayette, Ind.

April 29-30 — Kansas Grain and Feed Dealers Assn.; Hotel Baker, Hutchinson; sec., O. E. Case, 901 Wiley Bldg., Hutchinson.

May 15-16 — Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 17-18—National Broiler Convention; Nacogdoches, Texas; chm., Howard Ferm, National Broiler Assn., 77 West Washington St., Chicago 2, Ill.

May 25-27—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

June 5-7—Indiana Grain and Feed Dealers Assn., Inc.; French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

June 5-7—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta, Ga.; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 17—Pacific Northwest Grain Dealers Assn., Inc.; Davenport Hotel, Spokane, Wash.; sec., Pete Stallcop, 418 Peyton Bldg., Spokane 1, Wash.

June 20-24 — Grain Elevator and Processing Superintendents; Winnipeg, Man., Can.; sec., Dean M. Clark, Board of Trade Bldg., Chicago.

June 22-24—Association of Southern Feed and Fertilizer Control Officials; Jung Hotel, New Orleans, La.; sec., Bruce Poundstone, Agricultural Experiment Station, Lexington 29, Ky.

June 23-25—Grain Processing Machinery Mfrs. Assn.; Northernaire, Three Lakes, Wis.; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 27-28—Eastern Federation of Feed Merchants, Inc.; Hotel Commodore, New York, N.Y.; sec., Austin W. Carpenter, Sherburne, N.Y.

Aug. 15-16—Nutrition School for Feed Men; University of Wisconsin, Madison; chm., G. Bohstedt, Department of Animal Husbandry, U. of Wis., Madison 6, Wis.

Oct. 3-4—Pennsylvania Millers & Feed Dealers Assn.; Nittany Lion Inn, State College, Pa., sec., Richard I. Ammon, P.O. Box 329, Ephrata, Pa.

Oct. 12-13—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, Univ. of Maryland, College Park, Md.

UTAH FIRM EXPANDS

SALT LAKE CITY — Sterling H. Nelson, well-known Utah grain man, has formed partnership with his sons and expanded the Nelson company. The name of the firm, which was founded in 1921, is now Sterling H. Nelson & Sons, Inc.

Joining Mr. Nelson in the business are sons: Ralph, Calvin, Richard, Don and Norman Nelson.

EVERY MINERAL NEEDED . . . (Except limestone and salt). Five soluble phosphates and eight Trace Minerals, blended in exact predetermined amounts for ideal animal nutrition. Write for details.
THE HERMAN NAGEL CO.
53 W. Jackson Blvd. Chicago 4, Ill.

Soft Phosphate
SOFT PHOSPHATE RESEARCH INSTITUTE, INC.
COSTS LESS!

PROTECT YOURSELF
HEDGE
SOYBEANS
SOYBEAN OIL
SOYBEAN MEAL
Does the market go down after you have bought your supplies, or go up just before you planned to book ahead? You can guard against these inventory losses or being caught short by HEDGING in the . . .
FUTURES MARKETS
HEDGING is an inexpensive form of insurance. Let us give you a simple explanation of the hedging operation. And, our direct wires to the major commodity markets let us give unexcelled service.
ARTHUR C. HARRISON
Partner in charge of Commodity Department
Mitchell, Hutchins & Co.
MEMBERS
231 S. La Salle St. Chicago 4, Ill. ST. 2-1700
Chicago Board of Trade
Memphis Board of Trade
New York Stock Exchange
and Other Principal Commodity and Security Exchanges
One Wall St. New York 5 DIgby 4-0700

SAVE BY HAULING BOTH BULK AND SACKED FEED ON SAME TRIP

WRITE TODAY for complete information about a Simonsen Unloader to fit any truck with a standard grain or stock box.
SIMONSEN MFG., Dept. F. S., QUIMBY, IOWA

PAY WAY
Extra Rich FEEDS
DEALER'S CHOICE
Pay Way is becoming the choice of more dealers every year. Why? Because dealers have found that
Pay Way Is Profitable!
Write for proof and information.
PAY WAY FEED MILLS, Inc.
Oscar Straube, Pres.
KANSAS CITY, MO.

Worth Looking Into

New Products
New Services
New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 3661—Sales Leaflet

A four-page leaflet, listing 25 "ideas to help make more sales," has been developed by Kelly-Read and Co. Copies of the leaflet are offered at no cost. They cover such points as: Planning your working time; the importance of the first minute with the customer; making yourself understood; asking for the order, and keeping promises. To secure the leaflet check No. 3661 on the coupon and drop it in the mail.

No. 3662—Ad Reprints

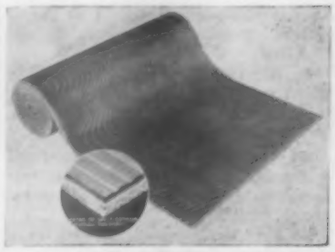
Transichrome Co. has available new literature on its full color transparency process which explains a new special introductory offer and quotes reduced rates for quantity copies. These transparencies are made from actual ad reprints, tear-sheets or any other printed matter with full color fidelity, the company states. Shadow box, socket, cord and plug for point-of-sale display are also available. Certain changes in copy are possible with this method, it is explained. To secure more complete details check No. 3662 on the coupon and drop it in the mail.

No. 5079—Anthrax Vaccine

A new method for the control of anthrax has been made available by Lederle Laboratories Division, American Cyanamid Co., with the marketing of Anthrax Spore Vaccine Carbozoo (Nonencapsulated). The new vaccine contains spores from nonvirulent strain of anthrax bacillus first isolated by Dr. M. Sterne of South Africa and claimed to have produced good results in that part of the world on 40 million cattle and sheep during the past 10 years. "Nonencapsulated" means that the anthrax organism has been deprived of the protective shell which, in virulent forms, protects it from antibodies or therapeutic agents, company officials said. Good experimental results in this country on several thousand cattle and sheep are claimed. Studies have shown that the new vaccine can be administered to dairy cows without apparent loss of milk production, it is said. It can be administered to all farm animals in the same dosage, one cc. Previously, vaccine dosage had to be modified according to the anthrax susceptibility of the animal. The new product is available in vials of 25 and 50 cc.'s. For more complete details check No. 5079 on the coupon and drop it in the mail.

No. 5088—Rubber Mats

Improvements in the cushioned rubber mats and runners for industrial use manufactured by the Flexi-Mat Corp. have been announced. These products have a live rubber topping on bonded backing made of sponge rubber. The runners and mats are ¼ in. thick. Mat sizes are 18x24 in., 18x30 in. and 18x36 in. Runners



come in 18 in. or 36 in. widths in rolls of 30-ft. or 60-ft. lengths. Custom manufacture is also provided. More complete information will be provided if you check No. 5088 on the coupon and drop it in the mail.

No. 5090—Lift Truck Operation

The sixth printing of the booklet, "How to Operate a Lift Truck," has been completed by the Hyster Co. and the 24-page publication is now available again free to lift truck operators and users. The two-color cartoon technique used in the booklet is designed for easy reading. Information about the operation of a lift truck, preventive maintenance, safety and basic materials handling are included. Secure the booklet by checking No. 5090 on the coupon and dropping it in the mail.

No. 5092—Antioxidant

Eastman Chemical Products, Inc., has available a descriptive booklet on its antioxidant, called by the trade name, Tenox VI. The new antioxidant is a mixture containing 10% Tenox BHA, 10% Tenox BHT, 6% Tenox propyl gallate, and 6% citric acid. This mixture, Tenox VI, is dissolved in an oil soluble combination of propylene glycol, glyceryl mono-oleate and corn oil. Tenox VI brings to the user the synergistic properties of BHA in combination with BHT, company spokesmen said. To secure the booklet and full particulars check No. 5092 on the coupon and mail it to this newspaper.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5039—Dust vaccine for chickens, Lederle Laboratories Division, American Cyanamid Co.

No. 5040—Soybean oil meal booklet, A. E. Staley Manufacturing Co.

No. 5041—Phosphorus information booklet, International Minerals & Chemical Corp.

No. 5043—Display rack for dealers, Dr. LeGear Medicine Co.

No. 5044—Batching system, Thurman Machine Co.

No. 5045—Packaging bulletin, Triangle Package Machinery Co.

No. 5046—Poultry disease treatment, Dr. Salsbury's Laboratories.

No. 5047—Feed mill, J. B. Sedberry, Inc.

No. 5048—Bulk transport, Baughman Manufacturing Co.

No. 5049—Feed marketing research, J. B. Sedberry, Inc.

No. 5050—Laboratory carts and equipment, Laboratory Construction Co.

No. 5051—Vacuum cleaner, Burrows Equipment Co.

No. 5052—Packaged supplement for broilers, Nopco Chemical Co.

No. 5053—Feed processing unit, Daffin Manufacturing Co.

No. 5054—50-lb. steel containers for poultry and hog feeds, Western Condensing Co.

No. 5055—Grain fumigant, Parsons Chemical Works.

No. 5056—Material handling, Hyster Co.

No. 5057—Rodenticide, Dr. Hess & Clark, Inc.

No. 5058—Tractor shovel, Frank G. Hough Co.

No. 5059—Detachable feed table for mills and mixers, Champion Portable Mill Co.

No. 5060—Trace minerals, International Salt Company, Inc.

No. 5061 — Gas brooder, Brower Manufacturing Co.

No. 5062—Horizontal pellet cooler-conditioner, Wenger Mixer Manufacturing Co.

No. 5063 — Seed broadcaster for tractor or truck, Farmer Feeder Co., Inc.

No. 5064—Antibiotics, Whitmoyer Laboratories, Inc.

No. 5065—Bag Packer, H. L. Stoker Co.

No. 5066—Feed flavor, Flavor Corporation of America.

No. 5067—Grain and seed cleaner, Thomas Robinson & Son, Ltd.

No. 5075—Horse feed supplement, Archer-Daniels-Midland Co.

No. 5076—Molasses blender, Myers-Sherman Co.

No. 5078—Pig creep feeder, Brower Manufacturing Co.

No. 5080 — Re-usable metal pail, Blatchford Calf Meal Co.

No. 5081—Feed supplement, American Cyanamid Co.

No. 5082—Polyethylene bag seam, Bemis Bro. Bag Co.

Send me information on the items marked:

- ☐ No. 3661—Sales Leaflet
- ☐ No. 3662—Ad Reprints
- ☐ No. 5079—Anthrax Vaccine
- ☐ No. 5088—Rubber Mats
- ☐ No. 5090—Lift Truck Operation
- ☐ No. 5092—Antioxidant

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

SLIP OUT — FOLD OVER ON THIS LINE — FASTEN (STAPLE, TAPE, GLUE) — MAIL

FIRST CLASS PERMIT No. 2 (Sec. 34.9, P. L. & R.) MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

Kansas Seed Dealers Hear Midwest Reports

WICHITA, KANSAS — More than 200 dealers from Kansas and 18 other states were in attendance at the eighth annual convention of the Kansas Seed Dealers Assn., held at Hotel Broadview, Jan. 7-8.

Kansas sells 75% of its alfalfa, brome grass, grain sorghum and sweet clover seeds throughout the U.S. and Canada and out-of-state representatives attend the convention to check on seed needs for the coming year.

Reports, presented in an open forum of out-of-state representatives, were optimistic on general conditions as they affect agriculture. These reports covered an area from 18 states in the midwest, extending as far east as Kentucky, north to South Dakota, west to Colorado and south to Arizona.

Highlighting the program was a panel discussion on "Facts About Seed Laws — Seed Testing — Seed Weights." Dr. Harold Myers, assistant dean of agriculture at Kansas State College was moderator.

George Knaup, Osborne, was elected president. Amos Starr, Atchison, was named first vice president and Butler H. Elliott, Hutchinson, was chosen as second vice president. O. E. Case, Hutchinson, was reelected executive secretary-treasurer.

Glidden Net Profit Shows Slight Dip

CLEVELAND, OHIO — Net profit of the Glidden Co. for the fiscal year ended Oct. 31, 1954, amounted to $7,093,043 after taxes and all charges, according to Dwight P. Joyce, president.

This was equal to $3.09 per share on 2,293,455 shares of common stock outstanding at the year end and compares with a net profit of $7,109,272, or $3.10 per share on the 2,290,794 shares outstanding at the close of the company's 1953 fiscal year. Mr. Joyce also reported that operating profit in the final three months of the fiscal year exceeded that for the same period last year and the early months of 1954. This upward trend has continued into the current year, he said.

In 1954 net sales of the company were $209,083,579, third highest in Glidden history and only 1.3% below the 1953 total of $211,758,522.

CYRUS B. TYLER DIES

SCRANTON, PA.—Cyrus B. Tyler, 76, former operator of a feed mill at Meshoppen and a former state senator, died recently.

Needed All The Time

PILOT BRAND OYSTER SHELL

FOR POULTRY

Every laying hen must have calcium carbonate, not only to make egg shell but for aid to digestion. Every chick needs it for bone building and sturdy growth. Every poultryman needs Pilot Brand Oyster Shell for the profits it insures. Every dealer needs a supply all the time to satisfy the demand that has increased every year for the past thirty years.

If you do not carry Pilot Brand Oyster Shell, order from your Jobber today or write us.

OYSTER SHELL PRODUCTS CORPORATION
NEW ROCHELLE, N. Y. ST. LOUIS, MO.

BIG DEMAND FOR EAT-MORE-EGGS SIGN

MINNEAPOLIS — Hilltop Laboratories officials report that demand for the "Eat More Eggs" signs which the firm recently offered has exceeded all expectations. The 36-by-48-in. cloth sign, offered to members of the poultry and feed industries, is now in its seventh re-run at a sign company. The total number of signs sold to feed stores, produce houses, hatcheries and other firms has passed the 3,000 mark. Individual orders varied from one to 100 signs. All firms buying them agreed to mount them on their trucks and in other public places where the brief message about eggs being the best current food buy could readily be seen by the public. Hilltop Laboratories officials point out that signs, made for outdoor service, are made available at below manufacturing cost as an aid in selling more eggs.

Fred Moore, Hilltop president, said his firm would continue to supply the signs at $1.90 through February. The signs, with red lettering, are on yellow drill cloth, and each corner has a brass eye for tying the signs. There is no Hilltop advertising on the sign. A check is requested to eliminate bookkeeping costs. Orders may be sent to Hilltop Laboratories, 718 Washington Ave. N., Minneapolis, Minn.

Study Shows Aureomycin May Help Reduce Loss From Abscessed Livers

A University of Nebraska study has indicated that use of Aureomycin (chemical name, chlortetracycline) may substantially reduce the loss of beef cattle livers now condemned for abscesses.

Experiments with calves were conducted, and the Nebraska scientists concluded: "Under the conditions of these experiments, it appears that Aureomycin prevented scouring during the early pre-weaning period, and thereby did not predispose the treated animals to necrophorus infection."

Abscesses currently cause the condemnation of about 5% of the livers from cattle slaughtered in federally inspected meat packing plants in the U.S. The annual loss of beef cattle livers now condemned for abscesses is estimated at $2 million.

In the study at Nebraska, Dr. John Matsushima and co-workers in the animal husbandry department gave one set of newborn calves a sugar-based tablet containing 15 milligrams of Aureomycin every day for the first 12 weeks of life. In another feeding test, two Aureomycin tablets were given every other day for a 12-week period. Each treated calf was paired with another on the same diet which did not contain the antibiotic.

When the animals reached 1,000 lb., they were slaughtered and the livers examined. All 10 of the treated calves had livers which passed inspection, but only two of the 10 animals which had not received the antibiotic had usable livers.

The high rate of liver abscess in the control group was not unique, the investigators reported. "In several previous feeding experiments with dual-purpose steers where no antibiotics were fed, approximately 75% of the livers were found to be abscessed and those which were not abscessed showed scar tissues," they said.

No cases of scours were observed in the test groups which received Aureomycin; calves in the groups which did not receive it scoured intermittently. The treated calves also gained weight 20% faster.

MOVE EVERYTHING . . . EASIER . . . . . FASTER!

With a BURROWS CONVEYOR

We have a conveyor for every need. Our full line of standard and custom conveyors are designed and engineered to save you time and money. The lightweight aluminum bag conveyor is illustrated above. Write us your problem, we have a conveyor to solve it; belt type, lightweight portable, stationary, floor to floor, bag pilers, etc.

APEX BAGGING SCALE The most accurate bagging scale available. Extremely fast and easy to operate.

BUCKETS Salem — Nu-Hy — Calumet and Willis. All sizes.

PORTABLE ELEVATOR One man works as two. Weighs less than 100 lbs. Handles 500 bu. shelled corn per hour.

BELTING All types and sizes of conveyor and elevator belting in stock.

VACUUM CLEANER Heavy-duty vacuum, has suction equal to 395 m. p.h. Dustproof bag, 12 gallon tank.

SEWING MACHINES Heavy duty, high speed, suspended head — portable and dolly models.

All Your Needs — All The Time

Write for Complete Information!

BURROWS EQUIPMENT COMPANY

1316-C Sherman Ave. Evanston, Ill.

Do you have the latest prices?

Steamed feeding grade

ROLLED OATS

For up-to-the-minute prices on Ex-L-Ent Brand steamed feeding grade rolled oats, or on steel-cut or whole oat groats, all you have to do is pick up your phone and call us. Or drop us a line.

General Mills, Inc.
PURITY OATS DIVISION
Box 1188, 1201 N.E. Jackson St.
Minneapolis 1, Minn. • Phone MAin 4341

12 YEARS with BARKER'S

J. B. EWING
Proprietor of
ORBISONIA
ROLLER MILLS
Orbisonia, Pa.

"Twelve years ago we started making our own brand of feed, and in looking around for a good mineral supplement, we decided on Barker's. Little did we realize at that time the extra value we were to receive from this move.

"Our feeds today are producing such wonderful results and our volume of business in the same manner has increased so tremendously that we feel it no more than right to let you know how we appreciate the value of your products and also the added value of your Laboratory and Field Service.

"By your Laboratory keeping our Formulas up to date at all times and your Field Service Technician taking care of our trouble problems, we are enabled to keep our present customers happy and satisfied as well as secure new satisfied customers from time to time."

—J. B. Ewing

SINCE 1851

LET US ADD BARKER'S MINERALS & VITAMINS TO YOUR FEEDS, TOO!

Specialists to the Feed Trade for 104 Years

BARKER, MOORE & MEIN CO.
541 NORTH ORIANNA ST. PHILADELPHIA 23, PA.

Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Egg Room Climate

The egg room on the poultry farm is where the producer makes his reputation as a quality egg producer. During winter particular attention must be paid to the egg room with respect to temperature and humidity, says J. C. Taylor of Rutgers University.

This is especially true when additional heat is supplied in the room to keep it comforatable for persons working in it. To maintain the original quality of a newly laid egg it is necessary to cool it rapidly and hold it at a temperature of 60 to 65 degrees and a relative humidity of 70% during winter.

To help maintain these ideal conditions, cases used for packing eggs should be held in the room at the same temperature a day or two before they are used.

Also important are cleanliness and fresh air. The final chore in the egg room every day should be to clean it and the equipment. Ventilation of the room during the night keeps air sweet and clean, Mr. Taylor continues. These chores will mean that the egg room will always be in top condition and that no egg nor cases will take on odors that can be transferred to eggs.

◆

Bulk Milk Handling

Bulk handling of milk won't bring lower costs to many dairy farms, but it can save enough in plant costs to make it profitable for many plants to change over from can handling to bulk handling, says Art Miller, economist at the University of Wisconsin. He has made a detailed study of the costs of bulk handling in the plant, on the route and at the farm.

Mr. Miller says bulk handling may be cheaper than can handling for herds with a daily milk production of more than 500 lb. For smaller herds, he said, an every-other-day pick-up may be the answer. Every-other-day pick up for bulk loading is just as fast as every day pick up for can loading if you produce at least 30 gallons daily—the Wisconsin average.

But other than this, it's the smaller milk or cheese plants that have the most to gain—that is, if they completely close down their can receiving rooms and concentrate entirely on bulk handling. Such a complete change-over by a small plant can permit substantial savings in plant-operating costs, Mr. Miller says, and these savings could be passed on to farmers. The best way to make this complete change-over, Mr. Miller thinks, is for plants to help finance equipment so all patrons can go into bulk handling at the same time.

Large milk handling plants with many small patrons may find savings from bulk handling used up in added hauling, field service, and quality test

DUK-PAK Kraft bags ...shed water, resist abrasions & stay cleaner -all this and more... at the same price!

A&S
ARKELL and SMITHS
CANAJOHARIE, N. Y. • WELLSBURG, W. VA. • MOBILE, ALA.

SUGARS For FEED Manufacturers

MINNEAPOLIS, MINN. 529 S. SEVENTH STREET
SIOUX CITY, IOWA 4TH & JACKSON
OMAHA, NEBRASKA 3331 FARNAM STREET
KANSAS CITY, MO. 215 W. PERSHING ROAD
WICHITA, KANSAS 143 NORTH ROCK ISLAND AVE.
MILWAUKEE, WISC. 259 EAST WELLS ST.
CHICAGO, ILL. 38 SOUTH DEARBORN STREET
DAVENPORT, IOWA 3RD & BRADY STREETS
DES MOINES, IOWA 5TH & WALNUT
ST. LOUIS, MO. 1504 SOUTH GRAND BLVD.

We Invite Your Inquiries

SEAVEY & FLARSHEIM BROKERAGE CO.

A complete line of

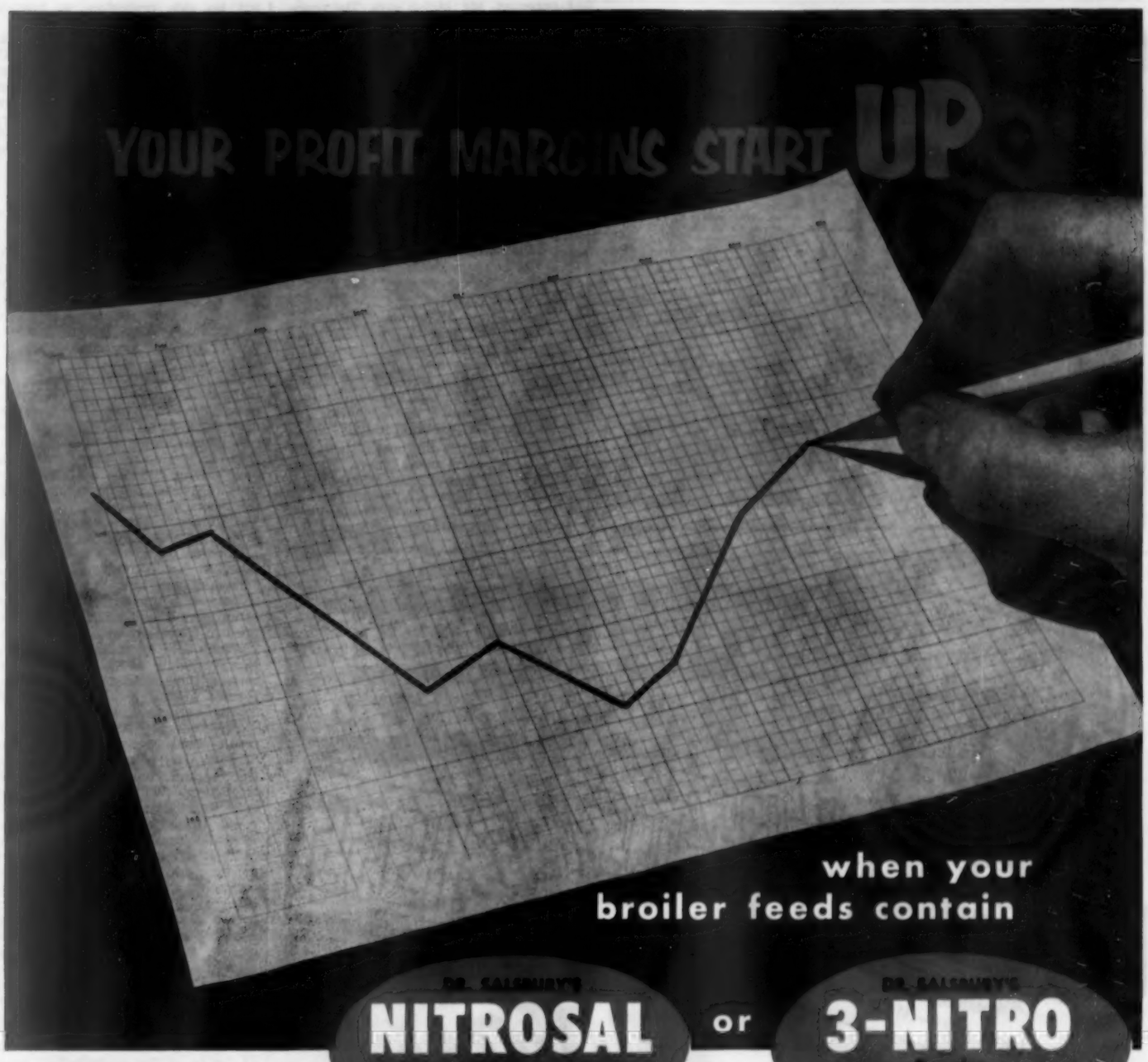
TRACE MINERALS *for* feed concentrates

COBALT CARBONATE	IRON OXIDE
COBALT SULFATE	IRON SULFATE
COBALT SULFATE MONOHYDRATE	MAGNESIUM SULFATE
COPPER CARBONATE	MANGANESE CARBONATE
COPPER HYDRATE	MANGANESE SULFATE
COPPER SULFATE	ZINC CARBONATE
	ZINC SULFATE

Uniformity and *good quality* are characteristics of all Harshaw Trace Mineral Compounds. These dependable necessities enable you to maintain the correct percentages of essential elements in your concentrates and furnish a complete mineral supplement to the feed industry. Let Harshaw supply your requirements from convenient stock locations.

SEND FOR YOUR COPY OF
"Functions and Requirements of Cobalt Livestock Rations"

THE HARSHAW CHEMICAL CO.
1945 East 97th Street, Cleveland 6, Ohio
CHICAGO CINCINNATI CLEVELAND DETROIT HOUSTON
LOS ANGELES NEW YORK PHILADELPHIA PITTSBURGH



Increase your profit margin by enjoying the extra income you get from feeds containing Nitrosal or 3-Nitro Powder...extra income per bag...extra income from greater sales volume.

Both products give broiler raisers these money making benefits from your feeds: Faster Growth! Redder Combs! Yellower Skins! Better Feathering! Superior Quality! Better Feed Utilization!

There already is a big "consumer acceptance" for feed containing Nitrosal or 3-Nitro. National Advertising and outstanding product performance are making this acceptance even bigger.

Your profit margins start up when your feeds contain Nitrosal or 3-Nitro. Write for portfolio giving full information about these performance proved products.

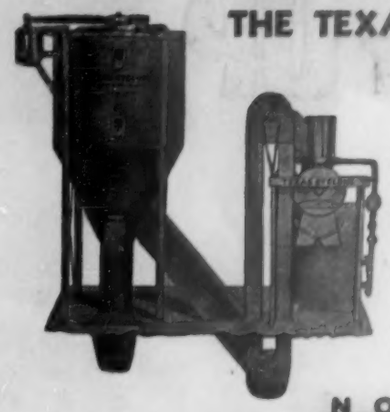
DR. SALSBURY'S LABORATORIES · Charles City, Iowa

recommend feed containing
3-NITRO TO INCREASE EGG PRODUCTION

3-Nitro helps pullets mature earlier, lay up to 15 days sooner. Improves development. Gives them added vitality to lay up to 12 extra eggs per hen. Make sure your egg mashes contain 3-Nitro. It's a profitable goodwill builder.

recommend, promote and profit from Dr. SALSBURY'S complete line of poultry medicines

MAKE NEW PROFITS
THE TEXAS CYCLONE WAY—



Texas Cyclone feed mixing units were made to work as a team—or to fit in with existing facilities. Shown here is the TEXAS CYCLONE FEED MIXER in combination with the TEXAS CYCLONE SWEET FEED MIXER—the finest mixing combination you can find. Molasses mixing is made easier and better with a patented spray process that insures bleeding. There are few moving parts.

SEND FOR DETAILS on this better way of SWEET FEED MIXING.

←The spray manifold that makes Texas Cyclone mixing better mixing.

NORWOOD MANUFACTURING COMPANY
MINERAL WELLS TEXAS

expenses, Mr. Miller says. The problem of finding and training drivers to sample and weigh milk, test it for quality, and explain reasons for milk rejection to farmers may also complicate any change-over to bulk milk handling.

◆

Milk Flavors

A good feeding schedule in the dairy barn will prevent a lot of off flavors in milk during the winter months, according to Virginia Polytechnic Institute. Dairy husbandmen at VPI say there are several things a farmer can do to keep milk quality up in cold weather.

Give strong feeds, like silage, after milking, not just before, to get rid of most feed flavors in the milk. It's also important to keep feeds cleaned up so there is not a lot of odor around the barn. Most off flavors get into the milk through the cow after she breathes the too-fragrant air.

Ventilation is the best remedy for ordinary barn odors. Even if you don't have a modern ventilating system in the barn, open windows help. For cold weather, fix the windows so they can be tilted in at the top, but put up side protectors to prevent drafts on the animals.

Milk cooling is as important in winter as in summer. Milk utensils can cause off flavors, too, if they aren't clean. That means you need a milkhouse where you can wash and sterilize the utensils after every milking. And remove the milk from the barn to the milkhouse as soon as possible after milking.

◆

Dairy Breeding Failures

J. D. Burke, dairy scientist at the University of Illinois College of Agriculture, says that nutrition is seldom a cause of breeding failure in dairy cattle. Rations that are balanced for good growth or milk production are usually enough for reproduction, he says.

Mr. Burke says more trouble results from such diseases as brucellosis, vibriosis, trichomoniasis, granular vaginitis or other vaginal troubles than from nutrition. He suggests that farmers do not breed cows that have calving difficulty until they have fully recovered and have returned to their normal heat cycle.

A 10-month lactation, a two-month dry period and a live calf born every 12 months would be a well-balanced schedule for a good dairy cow, the dairyman says, but not all cows keep on so good a schedule. Since the gestation period is about 283 days, cows need to conceive about 80 days after freshening to keep on this schedule. However, only about 65% will conceive on first service, and a few may require several services before conception occurs.

The best breeding efficiency will result when cows are not bred for 60 days after calving and not before the second normal heat period. Normal interval between heat periods is 18 to 24 days.

The farmer has to observe the cows in heat to get them bred at the right time. It's best to check them in the morning and evening when you turn them out in the yard with other cows. Keep a stable breeding chart, and record all heat periods. Cows that are expected in heat should be watched closely, starting with the 17th day after the previous heat.

Breeding at the right time during the heat period is important, too. Cows average about 18 hours in heat and ovulate 12 hours after the end of heat. Sperm will live only about 24 hours in the reproductive tract. For that reason you'll get best results with cows bred during the last half of the heat period. A practical method is to breed late in the afternoon the cows that you first observed in heat in the morning and to breed in the morning those that you first observed in heat the previous evening.

16 YEARS EXPERIENCE IN DRYING MOLASSES

1952 1953 1954 1955

Omalass

85% CANE BLACKSTRAP MOLASSES
(DEHYDRATED)

When you buy dried molasses, get the most for your money—the most sweetness—the most molasses—the most quality—the most dependability.

You can be sure when you buy OMALASS—made by an exclusive patented process by the world's first and largest dehydrator of cane blackstrap molasses.

The 16 years' experience behind OMALASS is your guarantee of quality—sweeter, free-flowing OMALASS.

SEND COUPON FOR COMPLETE DETAILS

Vy Lactos LABORATORIES, INC.
1901 East Euclid Avenue
Des Moines 13, Iowa

Vy LACTOS LABORATORIES, INC.
1901 East Euclid Ave.
Des Moines 13, Iowa.
Please send me complete details and prices on Omalass.
Name .....
Company .....
Street .....
City ..... State .....

BRAN • SHORTS
MIDDLINGS
Sacked or Bulk—Any Shipment
DREYER COMMISSION CO.
MEMBERS
KANSAS CITY BOARD OF TRADE
ST. LOUIS MERCHANTS EXCHANGE
Board of Trade — Kansas City 5, Mo. — Phone BA 5462
Merchants Exchange — St. Louis 2, Mo. — Phone MA 1-2958
Statistical Charts Furnished Free. We Handle Futures Trades in Kansas City.

INVESTIGATE
DEMON
• Steamed ROLLED OATS
• Steamed CRIMPED OATS
• PULVERIZED OATS
Write for information
DES MOINES OAT PRODUCTS CO.
Phone 6-3155
Des Moines, Iowa

Fortify with Dawe's CHOLINE CHLORIDE

A MAJOR FACTOR IN GROWTH, FEED CONVERSION AND REPRODUCTION

Choline is making an increasingly important contribution to feeding efficiency and the over-all health and productivity of poultry and swine. The trend is to increased levels of choline fortification because it is essential to vital body functions such as fat metabolism, nerve conduction and the assimilation of vitamin A.

Dawe's, serving the feed industry for over a quarter-century, is a basic producer of choline chloride and supplies it to the trade in stable, easy-to-handle, nutritionally available form.

DAWE'S CHOLINE CHLORIDE 25%: A dry feed supplement containing 25% choline chloride in powdered cereal carrier. Particle size is ideal for thorough dispersion. It is completely free-flowing, non-sticky and handles well in either batch or continuous mixing operations.

Dawe's Choline Chloride also is available in 70% aqueous solution . . . water clear and non-corrosive . . . for those who prefer this concentration and are equipped to supplement their formulas with liquids.

Both forms are traditional Dawe's quality in potency, purity and uniformity. They are in ample supply to meet your year 'round requirements. Write today for sample and quotations.

OTHER DAWE'S PRODUCTS FOR FEED FORTIFICATION

Riboflavin Supplements—Primary Fermentations

B_{12} Supplements—Primary Fermentations

B_{12}-Antibiotic Supplements—Widest selection

Procaine Penicillin—Most effective antibiotic for poultry

Bacitracin—All-purpose antibiotic

Pan-Dex—Pantothenic acid, dextrorotatory

Niacin

Forbee—Standard combinations of Riboflavin, Calcium Pantothenate, Niacin and Choline

Fixtdee—Mineral stable dry D_3, 200,000 I. C. Units per gram. In 16½ lb. tins for convenient batch premixing of lower potencies

Sterol D_2—Dry D_2 in soy or corn meal

Dry D_3—For four-legged animals

Fixtay—Mineral stable dry A, exclusive patent

R-Sonic 20x—Arsonic acid effective at low levels

Available singly in all standard potencies, or in combinations custom-blended to your specifications.

RENOWNED FOR QUALITY:
Dawe's feed fortification products and their trademark, a genuine Capodimonte Porcelain rooster, the original of which is on display at Dawe's Chicago office.

Dawe's laboratories, inc.
4800 S. RICHMOND STREET, CHICAGO 32, ILLINOIS
Distributors for Belgium: Comptoir Anversois d'Importation, "COMANIMA" 13, Courte rue des Claires, Antwerp, Belgium

World's Oldest and Largest Specialists in Vitamin Products for Feeds

A. J. McCOY
President

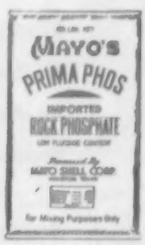
"Oyster Shell will always have top priority in any profitable Poultry operation. There is a better Oyster Shell — "SNOW FLAKE" is the brand. "SNOW FLAKE" means a satisfied consumer which means more business for you—order now." MAC.

← NOTHING BETTER →

Write — WIRE — Phone

MAYO SHELL CORP.

P. O. Box 784 HOUSTON, TEXAS Phone OR 3441



Dehydrated Alfalfa

...a rich source of pigmentation factors for poultry feeds

By ROY ELROD

Nutritionist, W. J. Small Company, Division, Archer-Daniels-Midland Co.

Roy Elrod

The coloring or pigmentation of the shanks, skin and beaks of meat birds (broilers) and newly hatched chicks is a factor of economic importance to poultry raisers. In the case of broilers, consumers generally prefer birds with light to deep yellow coloring of the skin. Because of this consumer preference, poultry buyers often are willing to pay a premium for well-colored birds and will discount birds showing a lack of yellow color or pigmentation. Poultrymen purchasing baby chicks have a definite preference for chicks that have well-colored shanks, skin, and beaks, as they feel this is a good indication that the chicks are strong and healthy and have been produced from breeder hens fed a well-balanced ration.

Pigmentation in the yellow-skinned breeds and strains of poultry results from the deposition of xanthophylls (a group of carotenoid pigments) under the skin and in the shanks and beaks of the birds. The degree of pigmentation obtained depends upon the xanthophyll concentration in the feed, the composition of the feed, and the health of the birds. Diseases such as coccidiosis and respiratory infections cause a marked loss of pigmentation. Research has shown that certain feedstuffs inhibit the development of pigmentation. The list of pigment inhibiting feedstuffs includes: milk products, mineral oil, fortified fish oils, fish meal, meat scraps and bone meal. Also, pigmentation will vary when different cereal grains are used in poultry feeds, as yellow corn is a richer source of pigments than barley, oats, wheat or milo.

Since one or several of the above listed pigmentation inhibiting feedstuffs are ordinarily used in feeds, it is apparent that the feed must contain a substantial level of xanthophylls in order to obtain the desired pigmentation, even in healthy birds.

Several feedstuffs are good sources of xanthophylls in feeds. The most potent of the pigment-rich feedstuffs

(Continued on page 59)

We have . . .
Ray Ewing
PERFORMANCE PRE-MIXES
BEFORE THE NAME GOES ON

Distributed in Nebraska, Kansas, Missouri and Eastern Colorado by:
The Robert E. McCully Company
525 East Armour Blvd. Kansas City 9, Missouri
Phone Valentine 7821

2^{00} vs. 5^{00}*

PHOSPHORUS

DOLLARS AND PHOSPHORUS ARE ALWAYS EQUATIONS THAT REQUIRE CONSTANT VIGILANCE

Feed buyers can pay most any price per unit for Phosphorus . . . from $2 to over $5*. Why not consider COLUMBIA SOFT PHOSPHATE for your low cost source of Phosphorus. It delivers at the lowest cost per ton and per unit. Also immediate service year in and year out.

Write for full information and prices.

COLUMBIA PHOSPHATE CO.
1007 WASHINGTON AVENUE
ST. LOUIS 1, MO.

*Comparison varies plus or minus depending on freight, analysis, etc.

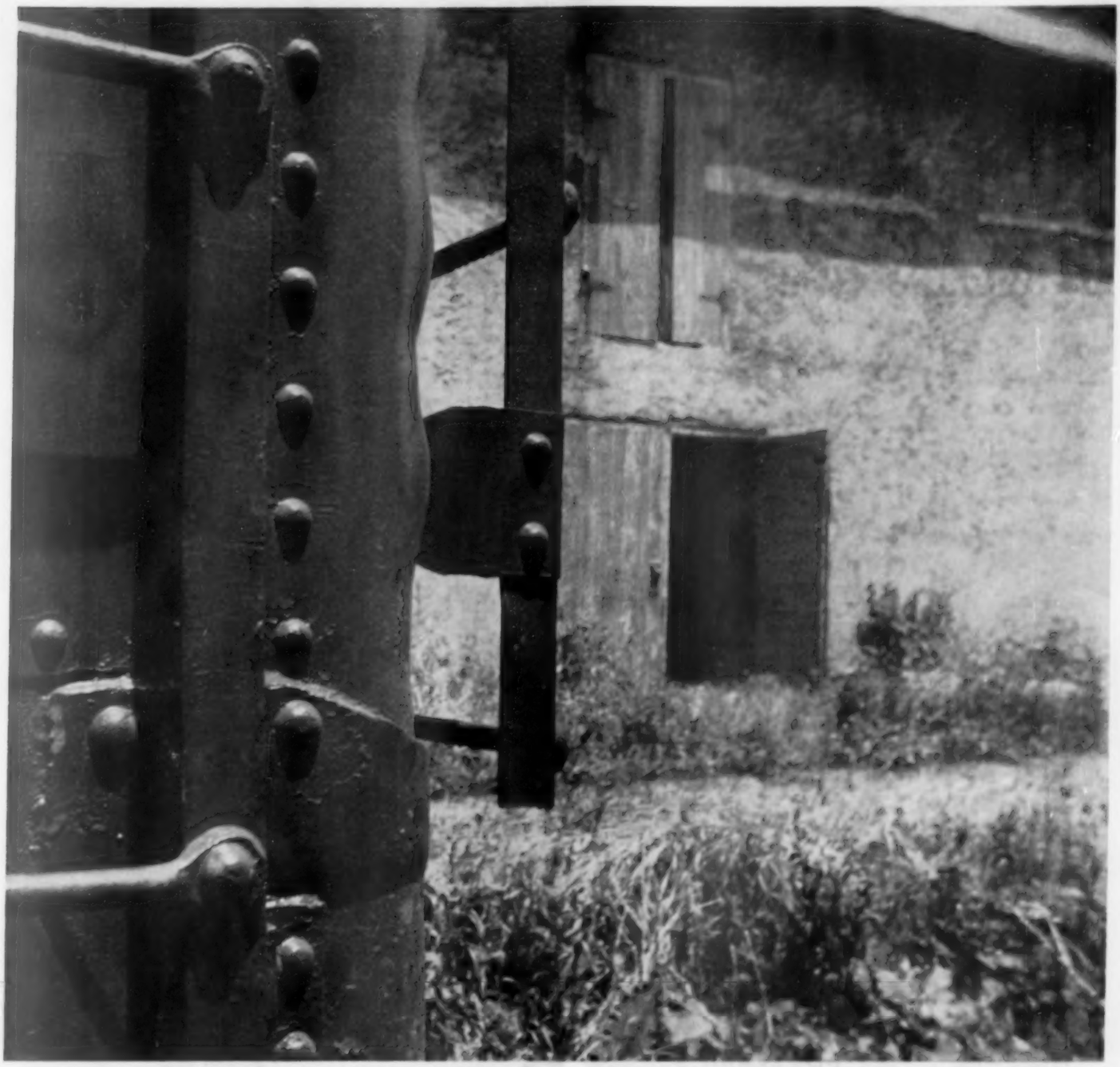
INCREASE YOUR FEED STORE PROFITS WITH
H&S Supermix
HOT OR COLD PROCESS
MOLASSES MIXER

With the H & S Molasses Mixer you can coat up to 15 tons of dairy and mineral feeds per hour with molasses. Slower production can be set to fit your operation. Semi-high speed mixing paddles blend feeds and molasses thoroughly and protect crimped oats and barley. Revolutionary twin-tube design gives you eight feet of mixing space in a compact machine. Exclusive spring pressure-type molasses injector sprays molasses evenly into chamber and automatically closes when machine is stopped, keeping excess molasses out of the chamber. Investigate the Hayes & Stolz Supermix Molasses Mixer today!

Write for details.

HAYES & STOLZ
INDUSTRIAL MANUFACTURING CO.
P. O. BOX 953 SOUTHSIDE STATION FORT WORTH, TEXAS

TRADE MARK REG.
VITA-GEE
LIVE YEAST CULTURE—Why be alarmed with a Brewers' Yeast Shortage? GET the FACTS on VITA-GEE!
Distributors and Sales Agents Wanted for several areas
ZELLERS' LABORATORIES READING, PA.



This was no day for vitamin E

Blistering hot with the sun at high noon, baking the natural vitamin E right out of stored feed ingredients. For heat destroys vitamin E.

Today, months later, when you're mixing these materials into finished feed, there may not be much vitamin E left. Even if you're using antioxidants, they can't protect what isn't there.

A lot of feed manufacturers know this and add a vitamin E supplement to their products. Some take what could be a costly chance. That doesn't make much sense because it costs but a few dimes per ton to add Myvamix Vitamin E Feed Supplement to feed. The vitamin E stays put because it's in the stable *d-α*-tocopheryl acetate form. The supplement is easy to handle because the vitamin is on a dry, non-dusting soy meal base. The potency is constant: 20,000 International Units of Vitamin E per pound.

For information or a quotation on Myvamix Vitamin E Feed Supplement, write, wire, or phone ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • Charles Albert Smith Limited, Montreal and Toronto.

"Myvamix" is a trade-mark

producers of
Myvamix Vitamin E

DPi

Also . . . vitamin A . . . distilled monoglycerides
. . . some 3500 Eastman Organic
Chemicals for science and industry

Distillation Products Industries
is a division of **Eastman Kodak Company**

Pelleting of Dehydrated Alfalfa

By R. G. Brierley

Assistant Vice President, The W. J. Small Co., Division of Archer-Daniels-Midland Co.

Judging from the experience of the past two years, it is likely that the trend toward the lowering of production costs and improvement of product quality through installation of pelleting equipment in the dehydrating industry, will continue.

For a long-time some feeders and feed manufacturers have had a requirement for alfalfa pellets for direct use and for regrinding. But pelleting of alfalfa wasn't of much significance until bulk handling for inert gas storage hit the industry with full force two years ago. As a matter of fact, pelleting was in general disrepute in the dehydrating business at the start of the 1953 season. About 75% of the pellet mills installed in alfalfa mills prior to 1952 were inoperative in early 1953, because of the distasteful memories that went along with early pelleting experience.

Alfalfa has always had pelleting characteristics different from mixed feeds, which made it almost impossible to handle economically in the early pellet machines. Conditioning capacity was inadequate, die life was non-existent, and breakdowns the rule. Water, instead of steam, was generally used for conditioning and this, coupled with poor coolers, resulted in lightweight, high moisture, un-uniform, poor pellets.

But one of the many things that happened during the market break of two years ago and the resulting financial problems of the industry, was the realization of a few dehydrators that the quality demands from the feed trade, plus the economy requirements of the industry, could only mean pelleting on a large scale to make use of inert gas storage and bulk handling. The industry and the pellet mill manufacturers got serious about pelleting alfalfa at this point. The resulting improvements in die life, production capacity, and cooler efficiency have been amazing.

Unfortunately, however, there are many problems yet to be solved and the unitiated can still be wary. Alfalfa is still the toughest feed product to pellet that we know. It is hard to condition, abrasive on equipment, and anything but uniform in the production plant. Alfalfa varies from one cutting to the next and from one field to the next. Poor quality pellets can cause some terrific headaches and make a tough job for a pellet mill.

In my humble opinion, no one has yet made a pellet mill specifically adapted to alfalfa. Until one is made, there will be heartaches and headaches for the producer who is cost and quality conscious. One car of high moisture or heating pellets can ruin 50 other cars in storage. Capacity and quality are no more kindred souls in the production of alfalfa pellets than they are in alfalfa meal. The easiest way to get capacity in alfalfa pellets results in poorest quality pellets. Pellet mills are not only costly to install and maintain, but also bring with them additional quality problems that take patience to solve.

R. G. Brierley

Most of us in the dehydrating business who are operating pellet mills are still learning. We owe a lot to the pellet mill manufacturers, who have spent a considerable amount of time and effort in solving alfalfa pelleting problems. Both manufacturer and producer are spurred on by the almost obvious advantages of pellets.

These advantages are many, but I think the following are the most important: Pellets can be handled easily in bulk like grain; dirty and dusty sacking in the mill can be eliminated; dust loss around a mill is kept to a minimum during pelleting operation; cooling of pellets is easier and more satisfactory than cooling of meal; pellets take half the space in storage as meal; pellets handle better in bins, conveyors, blending equipment and hopper cars than meal; the final product made from regrinding pellets to meal or granules is more compact, less dusty, more free flowing, and more uniform than conventional alfalfa meal.

With these advantages, it is hard to deny alfalfa pelleting as one of the greatest advances in the industry for some time.

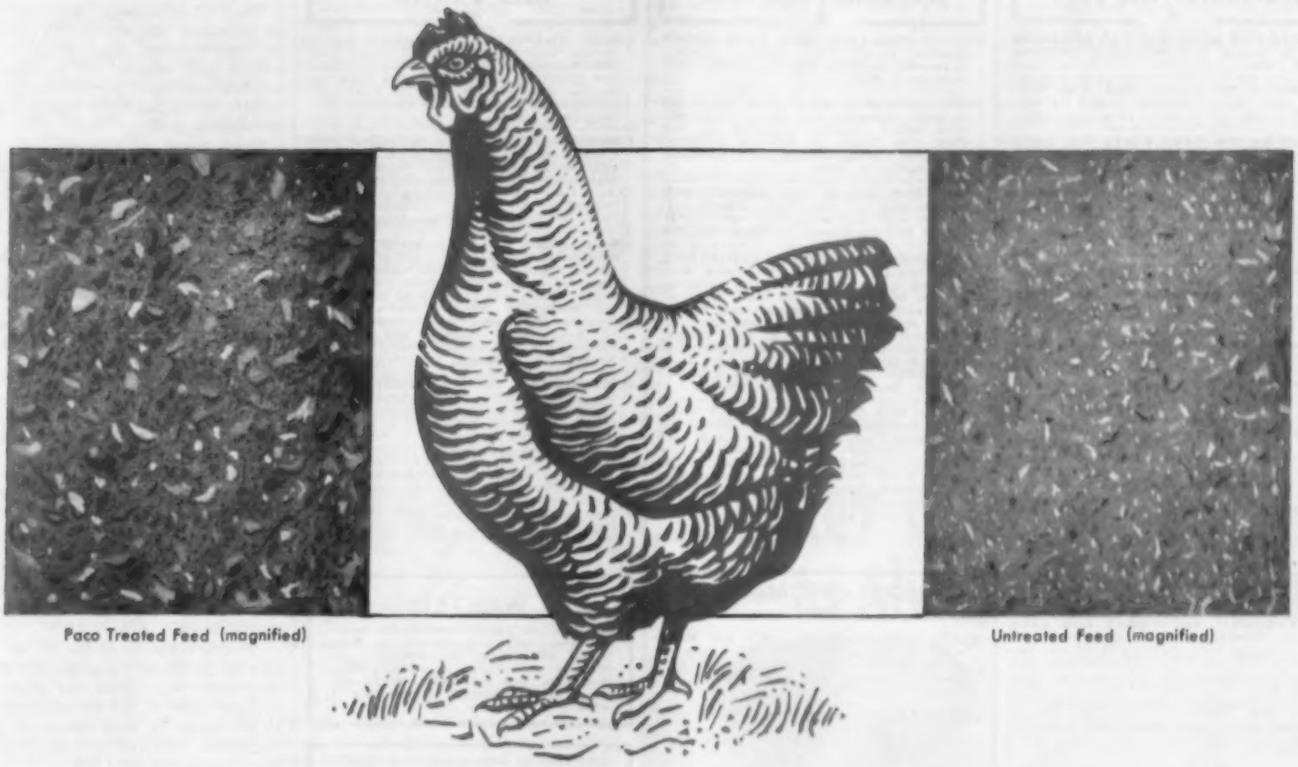
Of course, any advance in the industry should be judged primarily by its result on the quality of the finished product delivered to the feed trade, and it is this finished product improvement that has led to the great expansion of alfalfa pelleting in recent years. Pellets can be blended scientifically with proportional feeders and then ground to any granulation the feed trade desires. This grinding can be done on hammermills, rolls, or Entoleters, depending on finished product characteristics, desired yields and economy. It is up to the individual producer to decide which will suit his individual purposes best. Certainly today there is no uniformity of opinion in the industry as to the best type of reduction equipment and I would hesitate to recommend any.

PRODUCING and SELLING
MORE THAN
EVER
BEFORE
Because we give the finest possible service to the formula feed industry in the major protein supplements with assurance of the highest quality.
SPENCER KELLOGG AND SONS, INC.
BUFFALO 5, N. Y.
SPENCER KELLOGG MEAL SALES OFFICES ARE LOCATED AT:
Buffalo CL 5850
Chicago FR 2-3437
Decatur 3365
Des Moines 4-7291
Long Beach 67-9530
Minneapolis AT 0309
Philadelphia PE 5-8787
Spencer Kellogg Mills are located at: BUFFALO, N. Y., • BELLEVUE, OHIO, • CHICAGO, ILLINOIS, MINNEAPOLIS, MINN., • EDGEWATER, N. J., • DECATUR, ILL., • DES MOINES, IOWA, • LONG BEACH, CALIF.

VITAMINS
PRECISION BUILT FOR PRECISION NEEDS
VITINC VITAMINS, INC.
BASIC MATERIAL MANUFACTURERS and HEADQUARTERS FOR TECHNICAL INFORMATION
Write or Wire Your Requirements
VITAMINS, INC.
809 W. 58th Street, Chicago 21, Ill.

Give a chicken her choice

AND SHE'LL CHOOSE PACO CONDITIONED FEED



Paco Treated Feed (magnified)

Untreated Feed (magnified)

PACO makes the difference

- IMPROVES FEED TEXTURE
- HELPS ELIMINATE DUST
- IMPROVES PALATABILITY
- REDUCES FEEDING WASTE
- NO RANCIDITY PROBLEM

PACO Molasses Distillers Dried Solubles

provides a most economical and easy method of improving the physical properties of your feeds. As Paco comes to you in moisture-resistant paper bags, it is practically bone dry and consists of tiny thin flakes that mix readily with other feed ingredients. When mixed with feeds of normal moisture content, these Paco particles attract moisture, causing the dust and fines to adhere to them. This results in a finished feed of improved texture.

A highly nutritious feed ingredient in itself—Paco supplies vitamins, trace minerals and unidentified growth factors. Its cost is surprisingly low.

Available for immediate or deferred shipments.

WRITE FOR A FREE TESTING SAMPLE TODAY

PACO MOLASSES DISTILLERS DRIED SOLUBLES

A PRODUCT OF
PUBLICKER INDUSTRIES INC.
ANIMAL FEED SALES DEPARTMENT
1429 WALNUT ST., PHILADELPHIA 2, PA.

☆ Classified Ads ☆

Classified advertisements accepted until Wednesday each week for the issue of the following Saturday.
Rates: 15¢ per word; minimum charge $1.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies.

Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.
All Want Ads cash with order.

MACHINERY FOR SALE

WHIRLAWAY AIRBLAST CAR LOADERS. J. E. Hagan Mill Machinery, Jefferson City, Mo.

CHAMPION PORTABLE MILL AND MIXer, used seven months. Priced to sell. Ted Krebs, 321 N. Elm, Owatonna, Minn.

WRITE US, WE HAVE WHAT YOU NEED in supplies for feed and flour mills. If it's new or used, buy it from Hughes, Wayland, Mich.

FOR SALE—GENERAL ELECTRIC MOtors, 75 and 100 H.P., 3,560 R.P.M., 2,300 volts. Address 378, Feedstuffs, Minneapolis 1, Minn.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address 8774, Feedstuffs, Minneapolis 1, Minn.

FOR SALE—TWO DAVENPORT GRAIN Presses, No. 3, perfect condition, complete with variable speed drives and motors; $1,250 each. Address 402, Feedstuffs, Minneapolis 1, Minn.

FOR SALE—20" SPROUT-WALDRON ATtrition Mill with two 30 H.P. motors; Roskamp Large Oat Huller and Roller; 64" Pedelty Dust Collector; two 20 H.P. motors and large blowers; large Robinson Sifter; one ton Vertical Mixer. North Iowa Milling Co., Manly, Iowa.

COMPLETE PACKAGED PLANT, ONE year old. Consisting of one ton batch mixer with wipers, elevator, conveyors, cut-in hopper, sacking bin, 15 H.P. motor, and drives; stoker and valve bag packer. Van Waters & Rogers of California, Inc., 1432 E. Sixth St., Los Angeles 21, Cal.; Trinity 2843.

DEHYDRATION EQUIPMENT FOR SALE —One standard Heil, 40 H.P. drum fan drive motor with starter and switch; two gear box drives with 5 H.P. motors; two all steel chopped hay trailers, dual tires, $250 each; belt loader with ¼ motor, $175; D-4 Caterpillar Tractor Diesel, $800; LAI Case Tractor, 2 years old, butane, $1,300; 10 ft. disk, $300. W. A. Caplis, Box 1312, Shreveport, La.; Phone 25312 nights.

ONE NO. 2 FORSTER WHEAT CONDItioner complete all equipment, motors, drives and boiler, A-1. Two 250 H.P., 440-volt synchronous motors; one G.E., one Allis-Chalmers, with starting equipment, exciters, drives, etc.; four 50 H.P. flange mounted motors for California Pellet Mills, one totally enclosed; one Sutton Gravity Separator with stoner, BX100; No. 5 Forster Feed Dresser; two Horizontal Mixers, ½ and 1½ ton; one 24'x12" rotor lift, Richmond 5A Gyro Sifter; five Hoepner Sewing Machines, two new and two stands; 20 H.P. Hoffman Vacuum System; two Bagging Scales; several Entoleters; 10 H.P. R-M Air Conveying System; six 10x36 Roller Mills; one all metal A-drive; Pellet Coolers; Grain Steamers and complete equipment from 400-ton modern feed plant, and 4,000 sack flour mill. Write for list. Bargain prices. Ross Machine & Mill Supply, Inc., 13 N.E. 25th St., Phone Jackson 8-3132, Oklahoma City 5, Okla.

BEST BUY IN THE INDUSTRY—DUE TO fire destroying sacking and storage room, will sell complete Alfalfa Dehydrator. Complete Howard Type 5' by 36' drum with 5 ft. converted suction fan and 2' by 10' brick lined horizontal furnace with automatically controlled natural gas Webster burner, reduced gear box with 10 H.P. motor. Complete shimmer box, fan and 5 H.P. motor; 5' diameter exhaust fan and 50 H.P. motor and controls. Large 36" hammermill with 125 H.P. motor, complete with switches for all motors and conduits. Three dust collectors—2-6' diameter and 1-6' diameter, with tubing. One 24" elevator to drum with reduced gears and 5 H.P. motor. Complete feeder, automatically controlled with variable speed motor and side motor controlling oven feed. All motors 440-volt, 60-cycle. Unloading winch with 7½ H.P. motor. One 3 KVA transformer for electric welder. Entire equipment above at ½ price for 30-day sale at $12,500. Will sell field chopper extra for $1,000, having Continental butane engine, in fair shape, needs some repairs—balance of plant in good condition. Address 424, Feedstuffs, Minneapolis 1, Minn.

MACHINERY WANTED

GOOD USED RICHARDSON AUTOMATIC Receiving Scale with residue beam; 4 or 6 bu. size. Tyrone Milling Co., Tyrone, Pa.

WANTED—USED OR JUNKED 17A OR 17B Gehl Hammer Mill. State price and condition. M. G. Janssma, Fulda, Minn.

WANTED—USED FILTAIRE DUST COLlector. Large bucket elevator. Two Merchen powerless feeders. Bean Brothers, Hayts Corners, N. Y.

WANTED—ONE 150 H.P., 3,600 R.P.M., 60-cycle, 3-phase electric motor and starter. Southern States Feed Corp., P.O. Box 1, Red Oak, Ga.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

MACHINERY FOR SALE

DAFFIN PORTABLE MILL, USED THREE months; $4,500 down, balance monthly payments. Address 370, Feedstuffs, Minneapolis 1, Minn.

USED PORTABLE MILL NOW LOCATED in Iowa. Equipped with 20-inch Gehl Mill with mixer attached, mounted on 1948 Ford F-5 Truck. In running condition and good shape. Address 397, Feedstuffs, Minneapolis 1, Minn.

WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

FOR SALE — VERTICAL FEED MIXER, 2,000 lb.; 50 H.P. California Pellet Mill; all-steel elevator legs; pulleys; shafting; wooden elevator legs; 50 H.P. Hammermills; rebuilt Richardson automatic scales; Union Special Bag Closing Machines; rebuilt motors; five N. & M. Meal Driers; four 9x36, five 9x30 N. & M. Rollermills; two 9x30 Great Western, 2 pair high, shell type, roller mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

CLOSING OUT DISTILLERY GRAIN HANdling Equipment—Located in Louisville, Ky.: Two 6"x4" Bucket Elevators 91' H; Screw Conveyor: 104' of 9" and 156' of 12"; Rotex Screens 40"x96", 48"x96"; Raymond Flash Dryer; two American 42"x 120" Double Drum Dryers; two Rotary Steam Tube Dryers 4'6"x40'; one Horizontal Paddle Mixer, 16 cu. ft. with 7½ H.P. motor. Priced to sell. Perry Equipment Corp., 1403 N. 4th St., Philadelphia 22, Pa.

BUSINESS OPPORTUNITIES

WHEN YOU WANT TO BUY AN ELEvator or feed mill, see or write us your needs. We have some good ones in Ohio, Indiana, Illinois. Mid-West Business Exchange, Plymouth, Ind.

FOR SALE—FEED BUSINESS, 50 MILES north of Denver, Colo., in heart of irrigated country. Modern building, machinery and attached small capacity elevator. Address 403, Feedstuffs, Minneapolis 1, Minn.

FOR SALE — WELL ESTABLISHED flour, feed and corn mill. Also retail coal yard. Located in upper east Tennessee. Good farming and dairy community. Priced for quick sale as owner is in poor health. Address 423, Feedstuffs, Minneapolis 1, Minn.

SITUATIONS WANTED

SUCCESSFUL VITAMIN SALES EXPERIience available — Experience in personal selling and sales direction. Basic vitamins Y and mixes. College education in animal husbandry. Prefer working on drawing account and percentage arrangement. Address 421, Feedstuffs, 612 Board of Trade Bldg., Kansas City 6, Mo.

SOON AVAILABLE — HARD HITTING, well-trained salesman for Delmarva Peninsula. Twenty years' experience, highly conversant in sales services in all their phases. Prefer lines allied to poultry and stock industry. Reference, the trade and banks. Willing to start on moderate drawing account for stipulated period to justify your confidence in my ability. In reply give brief resume of line and proposals. Address 396, Feedstuffs, Minneapolis 1, Minn.

BABY CHICKS FOR SALE

BABY CHICKS—AS HATCHED OR SEXED —Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

HELP WANTED

SALESMEN AND JOBBERS — TERRIitories open for premium quality grade A calf milk-replacer. Established product. Complete promotion. Tri Associates, Inc., 8500 Pillsbury Ave., Minneapolis, Minn.

WANTED — MACHINERY SALESMAN TO sell grain and feed equipment, territory in Michigan; exceptional opportunity with established manufacturer. Send photo with application. Address 362, Feedstuffs, Minneapolis 1, Minn.

SALESMAN TO CALL ON LIVESTOCK producers and feed stores to sell a complete line of animal health products. Salary plus excellent commission. Address 391, Feedstuffs, Minneapolis 1, Minn.

Buy and Sell
through
WANT ADS
—in—
FEEDSTUFFS

HELP WANTED

SALES TRAINEE — SOUTHERN CALIifornia. Sales opportunity for young man with knowledge and experience in feeds and nutrition, also poultry and livestock raising. Send resume. Indicate salary requirements. Address 406, Feedstuffs, Minneapolis 1, Minn.

CHEMIST — EXCELLENT OPENING FOR chemist to do vitamin and chemical analyses of ingredients and finished feeds. Minneapolis location. Requires experience. Age from 25 to 45. Complete resume requested. All replies confidential. Address 385, Feedstuffs, Minneapolis 1, Minn.

AAA-1 FEED MILLING COMPANY IN Southeast with sales over $12 million annually needs general sales manager. Exceptional earning opportunity for mature, capable man, well experienced in developing dealership organizations and sales training. Our sales manager knows of this ad. Send recent snapshot and complete business resume. Address 363, Feedstuffs, Minneapolis 1, Minn.

EXPERIENCED FEED SALESMEN—SALary, expenses, car furnished and unlimited bonus arrangement. Complete line of formula feeds, concentrates, minerals, specialties and ingredients to sell. Highly advertised and strongly promoted line with one of the best known concerns in American agriculture—Swift & Co. Write full particulars giving age, experience, education and snapshot. You can make your permanent career with this fast-growing department. General Feed Department, Swift & Co., U. S. Yards, Chicago 9, Ill.

WANTED

Maintenance superintendent for medium size feed mill located in East. Salary will depend on knowledge, experience and ability in millwrighting, electricity and mechanics. Write Address 355, Feedstuffs, Minneapolis 1, Minn.

WANTED by large established supplier of vitamin supplements for all poultry and livestock rations, experienced salesman with manufacturer acquaintance in Nebraska, Kansas and Colorado. Salary, commission, car allowance and expenses with unlimited opportunities for advancement depending upon performance. Address 394, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.

USDA to Take Bids On Butter for Export

WASHINGTON—The U.S. Department of Agriculture has announced the offer of 10 million pounds of Commodity Credit Corp.-owned butter for sale on a competitive bid basis for commercial export. Offers will be considered Monday of each week, beginning Jan. 24, until this quantity of butter is sold or the program is terminated. No additional butter will be sold on this basis before March 1, 1955.

Bid for the butter acquired by CCC in its price support operations may be submitted on the basis of delivery f.a.s. vessel at port of export or point of storage. Bids may be made on U.S. Grade A or U.S. Grade B butter. Within 60 days after delivery date, proof of export of butter must be submitted. The butter may be reprocessed or repackaged for export as approved by CCC, or butter of equal or higher grade having equivalent quantities of butterfat from U.S. production may be exported to countries as approved by CCC.

North Carolina Feed Tonnage Shows Increase

RALEIGH, N.C.—The North Carolina Department of Agriculture reports that the state's feed tonnage for November was 93,158. This compares with 85,992 tons in November of 1953.

The total tonnage for the July-November period of the 1954-55 fiscal year was 457,459. This compares with 428,590 tons in the same period of the previous year.

Cargill to Build At Chattanooga

MINNEAPOLIS—Cargill, Inc., has acquired a site at Chattanooga, Tenn., on the Tennessee River, and will erect a grain elevator of approximately 215,000 bu. capacity. Construction will start immediately, and it is expected the plant will be in operation in about four months.

The Chattanooga elevator will complement the company's elevator at Guntersville, Ala., and the two plants will enable the company to provide excellent service to its customers throughout the South, Cargill spokesmen said.

They point to the new plant as another indication of the company's respect for the spectacular and continuing growth of the South.

Charles Phillips Named Canada Control Official

OTTAWA, CANADA—Charles R. Phillips has been appointed feed control official in Canada and will head administration of the Feeding Stuffs Act. He succeeds A. C. Heise, who has been promoted to another position in the Department of Agriculture.

The appointments are part of a series of changes in the department.

On the retirement of W. R. White, J. E. Blakeman has been appointed chief, plant products division, production service, Canada Department of Agriculture. Mr. Blakeman formerly was chief of inspection services of the division.

On the transfer of Dr. C. W. Leggatt to the Royal Canadian Air Force, Mr. Heise was appointed chief, laboratory services, of the division. Mr. Heise formerly was associate chief, inspection services, in charge of administering the feed law.

Mr. Phillips' new title is associate chief (feeds), inspection services.

JAMES H. COSGRIFF DIES

BUFFALO, N.Y.—James H. Cosgriff, 77, former vice president and general manager of the Black Rock Milling Corp., Buffalo, N.Y., died Jan. 5 in a Buffalo hospital after a long illness. He also had served as vice president and general manager of Park & Pollard Co. of Boston in charge of its Buffalo office. In later years he served as president of the P & P Car Line, Inc., Buffalo refrigerator car manufacturer.

Keith Jones Kenneth Appleby

JOIN KENT STAFF—The adding of new personnel to the staff of Kent Feeds has been announced by G. A. Kent, president of the company. Keith Jones has been named salesman for southeastern Iowa and part of western Illinois under the jurisdiction of Frank Greenwalt, territory supervisor. Kenneth Appleby, Cedar Falls, Iowa, has been appointed turkey and poultry consultant for north central Iowa. His services will supplement those now provided by Fred Roberts, vice president and nutritional director, and Tom Russell and Curt Wells, poultry and turkey specialists. Mr. Jones was formerly manager of the Winfield (Iowa) Farmers Cooperative Co. and Mr. Appleby has been connected with the turkey industry since 1937.

Need for Good Management Cited in Comments on Feed Industry Outlook

NEW YORK—Greater competition during the coming year will place emphasis on good management practices by the feed industry and its customers. This is noted by W. H. McInnis and H. J. Prebluda of the U.S. Industrial Chemicals Co., division of National Distillers Products Corp., in comments on the feed industry outlook for 1955.

However, when all things are considered, 1955 should be a year where intelligent management will be rewarded with increased business and greater profits, the U.S.I. officials said.

"It is fortunate that our colleges and industrially owned research organizations have done an excellent job in supplying the feed industry with the basic information for running a well managed business," they said. "It is up to the feed manufacturers to make use of this knowledge. The challenge of the coming year should be eagerly anticipated by men of foresight and courage."

Poultry Industry

Regarding the poultry industry, the U.S.I. officials said that the hurricanes of 1954 damaged about 20% of the nation's broiler producing facilities and that only the larger broiler producers affected would be able to rebuild. This, they added, means that many of the smaller feed customers will eventually disappear.

"Crops of broilers and turkeys will probably be in excess of demand, resulting in an unstable market during certain times of the year," they continued. "In order to absorb the excess production during peak season, there will be greater promotion in the food processing field for canned chickens, 'bunny-burgers,' 'ham sticks,' 'turkey burgers' and frozen 'chicken popsickles.'

"Inefficient management practices on the part of some growers financed by feed manufacturers will result in the disappearance of marginal operators.

"Feed manufacturers will realize that financing is really a function of the local banks, and customers should be encouraged to use such credit wherever possible."

Mr. McInnis and Dr. Prebluda went on to say that "feed manufacturers must lower costs of distribution and also find some method of handling bulk deliveries so as to retain the services of dealers."

The year 1955 will probably be another year in which protein sources will be in short supply during certain seasons, they continued.

"Soybean meal prices," they said, "should ease after the first quarter. Domestic sources of fish meal will tighten, and there will be less dried milk available for feed use.

"The use of urea and ammoniated products in feeds for ruminants will grow in popularity. Other materials will become available to add diversity to the number of substitutes for ingredients in short supply."

Research Discoveries

The U.S.I. officials said one aspect of the feed business that is often overlooked is the necessity of acquainting farmers and feed dealers with new research discoveries. When the farmer is slow to take advantage of better methods, the whole industry suffers, they pointed out. The use of modern communication methods such as television will help to bridge this gap.

It is expected that 1955 will see greater use of certain feed ingredients previously thought to be poor in quality. "These ingredients, such as corn cobs, corn stalks and straw, will be boosted up to better nutritional value by the use of vitamins, methionine, urea, propionamide and other compounds," said Mr. McInnis and Dr. Prebluda. "Methionine will assume increased importance because of its activity as a detoxifier as well as a promoter of feed efficiency.

"Although many 'booster' supplements sold by feed mixers appear to have a high initial cost, it will be found that in many cases total costs can be reduced by using these preparations."

One of the best methods of reducing unit costs of production is to keep equipment running as much as possible. This will spur sales efforts to sell all of the various types the feed plant can produce, the U.S.I. officials said. Dealer education should pay off in higher sales.

"Along the nutritional front," they continued, "probably the most significant advances will be made in ruminant feeding. Compounds such as antibiotics, amino acids and diethylstilbestrol will assume prominence for dairy and beef cattle. Perhaps the use of these ingredients will cause some dairy breed associations to change their basic policy on Advanced Registry.

"The coming year will see great developments in new applications of existing knowledge."

DEHYDRATED ALFALFA

(Continued from page 54)

and the xanthophyll content of each is listed below.

Feedstuff	Xanthophyll content grams per ton*
Dehydrated Alfalfa Meal	350
Corn Gluten Meal	18-40
Ground Yellow Corn	2.7-4.5

*Based on available published data.

It can readily be seen that dehydrated alfalfa is vastly superior to corn gluten meal and yellow corn as a source of xanthophyll. Yellow corn, which has a higher pigment content than any of the commonly used cereal grains, is still a relatively poor source. Ground milo, which is used extensively in some areas as a replacement for a part of the corn in broiler feeds, is devoid of xanthophyll pigments.

Even though yellow corn may constitute up to 60% of a broiler feed, additional xanthophyll in the feed is necessary to obtain satisfactory pigmentation in the birds, and the need for additional xanthophyll is even greater when milo is included in the formula to replace some of the corn.

The most practical and economical means of supplying the needed xanthophyll in broiler feeds is through the use of dehydrated alfalfa meal of high quality. Dehydrated alfalfa meal with a guaranteed vitamin A potency should be used, since the xanthophyll content of alfalfa meal apparently is in relation to its carotene (pro-vitamin A), content, which means that alfalfa meal with a low or unknown carotene content cannot be considered a reliable source of xanthophyll. Experimentation and field experience have shown that a level of 3 to 5% of dehydrated alfalfa is sufficient to produce attractive, well-colored birds.

There are available some commercial xanthophyll concentrates for use in feeds. However, when used at recommended levels, these products supply much less xanthophyll than dehydrated alfalfa, and are not as economical. For example, one of these concentrates contains 1.25 grams of xanthophyll per pound, and the recommended level for use in broiler feeds is 2 lb. per ton. This amount will supply only 2.5 grams of xanthophyll per ton of feed; whereas, 5% of dehydrated alfalfa meal will contribute 17.5 grams per ton of feed. Thus, 14 lb. of the concentrate or seven times the recommended level, would be required to supply as much xanthophyll as 5% of dehydrated alfalfa meal.

At current quoted prices, the xanthophyll in this concentrate costs 39¢ per gram when the value of the carotene, also carried in this product, is deducted. On this basis, the 2.5 grams of xanthophyll furnished by 2 lb. of the concentrate (recommended level per ton of feed) costs 97.5¢. Using the same value for xanthophyll, the 17.5 grams supplied by 5% of dehydrated alfalfa in a ton of feed would be worth $6.82. When valued at 39¢ per gram, the xanthophyll in a ton of dehydrated alfalfa (350 grams) would be worth something like $136.50.

Although the carotene (pro-vitamin A), and protein content of dehydrated alfalfa are generally known and appreciated, the numerous other nutritionally important plus values it supplies should be considered when making a dollars and cents evaluation of this unusual and versatile feed ingredient. Among these additional nutritional factors supplied by high quality dehydrated alfalfa meal are: vitamins E and K, B-complex vitamins, important minerals, including trace elements, and the unidentified factors which promote greatly improved growing, fattening, and reproductive performance of poultry and livestock.

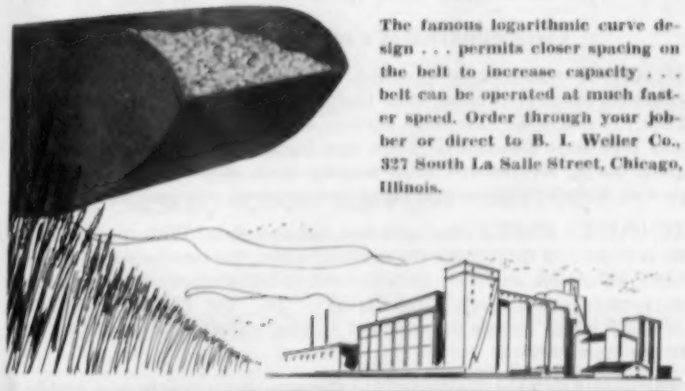
"SNOW-FLAKE"
OYSTER
SHELL

Standard steel elevators, belt and bucket type, available from stock. Ten Heavy Duty sizes, from 300 to 10,000 Bu./Hr., for continuous service and four Light Duty sizes, from 110 to 750 Bu./Hr., for intermittent service. We also manufacture screw conveyors and hoppers. Send your requirements for complete information.
GODSHALK
Sheet Metal Fabricators
BANGOR, PA.

HIGHER QUALITY HEAT TREATED HAMMERS
Hammers direct from manufacturer of years' experience. Send your specifications or worn hammer. Quantity discounts on hammers and screens. Ask for prices.
SOUTHWEST MILL SUPPLY CO.
P. O. Box 7455 N. Kansas City, Mo.

SELL FARMER FEEDER THE LEADER
Fast-selling, extra-profit makers in feeding, watering and seeding equipment. Write for Folder FS!
Farmer Feeder Co., Inc.
Cambridge City, Ind.

CALUMET CUPS
Now--as Always the Leader



The famous logarithmic curve design . . . permits closer spacing on the belt to increase capacity . . . belt can be operated at much faster speed. Order through your jobber or direct to B. I. Weller Co., 327 South La Salle Street, Chicago, Illinois.

PROFIT - WISE DEALERS SELL
AND
PROGRESSIVE FARMERS
FEED
FAULTLESS
FEEDS
MODERNIZED FAULTLESS FEEDS
TIME-TESTED and FARM-PROVEN SINCE 1881
FAULTLESS MILLING CO., Springfield, Ill.

HEYWOOD & RABB, INC.
JOBBERS • BROKERS • CARRIERS
GRAIN & FEED INGREDIENTS
Serving the Entire Southwest
CHATTANOOGA, TENNESSEE
P. O. Box 9008, East Ridge Station 3923 Ringgold Road Phone 9-4347 TWX CT 7048

PERSONAL SERVICE AT NO EXTRA COST
WALSH GRAIN CO.
1002 FLOUR EXCHANGE, MINNEAPOLIS • LINCOLN 0678

NOW — for fast, full-strength ANTIBIOTIC ACTION

Whitmoyer AQUATRACIN

the purified antibiotic complex... uniformly potent...completely soluble

NOW—you can offer your customers a *CHEMICALLY PURE* antibiotic blended with a completely soluble carrier. AQUATRACIN, produced under a unique patented process, compares in quality and in uniform high potency with the pharmaceutical products designed for human use.

AQUATRACIN promises more consistent activity than less pure antibiotic products...gives rapid, uniform dispersion for fast, full strength effectiveness, and, in dry form, shows no appreciable loss in potency over prolonged storage periods.

Check AQUATRACIN's sure-sale advantages:

EFFECTIVE! AQUATRACIN provides consistently powerful antibiotic effectiveness in controlling Blue Comb Disease (Pullet Disease, Mud Fever, Non-specific Enteritis), Chronic Respiratory (Air Sac) Disease and Infectious Sinusitis. It helps sick birds maintain normal weight gains during treatment—helps healthy birds stay "on feed" during periods of stress, such as moving to new quarters, vaccination, etc.

COMPLETELY SOLUBLE! Not only fast, but *complete!* With speedy, uniform dispersion throughout the drinking water, the total beneficial antibiotic effects are available instantly and in full strength. Remind your customers—even sick birds drink! "OK" for MECHANICAL WATERERS. There's no sediment to clog valves. Use AQUATRACIN in *any* type waterer.

UNIFORM RESULTS! ECONOMICAL! Because AQUATRACIN is a highly purified product, more consistent antibiotic activity per dollar can be expected than with less uniform antibiotic products.

STABLE! AQUATRACIN in dry form has shown no loss in potency even after two years of storage.

PROFITABLE, REPEAT BUSINESS! Once they have used it, you will find your customers asking for it again and again. AQUATRACIN will soon "sell itself."

Sell more feed, improve your "antibiotic feeds" with

KEMITRACIN

the chemically-uniform antibiotic for feeds

Used at "low levels," KEMITRACIN will put more weight gains per pound into your feed—give poultrymen a faster return on their investment. Used at "high levels" it makes up a mash that helps control outbreaks of Blue Comb (Mud Fever, Non-specific Enteritis), Chronic Respiratory (Air Sac) Disease and Infectious Sinusitis.

KEMITRACIN is a purified antibiotic complex designed for feed use. It is not simply an antibiotic by-product, not just a crude "feed grade" residue. It differs from AQUATRACIN chiefly in that it is designed solely for use in feed and is thus not soluble. Free from dried waste material, it's a non-caking powder, impervious to insects—stable on storage, free-flowing for maximum particle distribution.

Customers will like feed supplemented with KEMITRACIN...you'll like the supplementary profits! Investigate KEMITRACIN today!

"SYNERGISM"—a new concept in COCCIDIOSIS CONTROL!

Whitmoyer WHITSYN

Combining maximum effectiveness with minimum drug dosage, Whitmoyer WHITSYN controls *all* types of coccidiosis, stubborn intestinal as well as cecal.

Make certain your customers understand that WHITSYN is something *new* under the sun...an entirely new medical principle applied to the treatment of coccidiosis. Two *synergistic* drugs, acting together, attack the coccidial organism at several points simultaneously. This unique multiple action results in fast, thorough action...less mortality...less loss in weight...fewer culls...less morbidity. Yet WHITSYN costs no more.

So that you can recommend and sell a WHITSYN product for each phase of coccidiosis control, stock all three easy-to-use forms: (1) WHITSYN-5 for *control* of outbreaks of coccidiosis. (2) WHITSYN-10 (ready soon) for *prevention. (both are dry, free-flowing and mix readily in the feed.)* (3) WHITSYN-S for *treatment* in the drinking water.

FOR COMPLETE INFORMATION AND PRICES on AQUATRACIN, KEMITRACIN and WHITSYN, write to Whitmoyer Laboratories, Inc., Box F-52, Myerstown, Penna.

Now in our 25th year

Whitmoyer LABORATORIES, INC.

MYERSTOWN, PENNA.

Products of Scientific Merit

DISTRIBUTORS: NEW ENGLAND: Grandone, Inc., Needham, Mass.
CANADA: Whitmoyer Laboratories, Ltd., Yarmouth, Nova Scotia

JOBBERS OR WAREHOUSES LOCATED AT MANY CONVENIENT POINTS:

Salisbury, Md.
Harrisonburg, Va.
Raleigh, N. C.
Atlanta, Ga.
Jamesville, Ga.
Jacksonville, Fla.
Mobile, Ala.
Jackson, Miss.
Rogers, Ark.
Fayetteville, Ark.
Center, Texas
Lubbock, Texas
Chickasha, Okla.
Salt Lake City, Utah
Des Moines, Iowa
Evansville, Ind.
Ft. Wayne, Ind.
Goshen, Ind.
Botkins, Ohio
Minneapolis, Minn.

R. L. Parker

R. L. Parker, Official Of Corn Products, Dies

EAST ORANGE, N.J.—R. LeRoy Parker, vice president of Corn Products Sales Co., New York, and manager of its feed division, died at his home here on Jan. 13 after a prolonged illness of 19 months. He was 61 years old.

Mr. Parker was with the company for 42 years, having started as a messenger, and after serving in various capacities in the feed department, became manager in 1948.

He was a member of the Masonic Order since about 1925.

Survivors include his widow, Mrs. Mabel Parker; a son, R. L. Parker, Jr.; and two grandchildren.

Episcopal funeral services were held Jan. 17 and interment was in Hollywood Cemetery, Union, N.J.

NEW WISCONSIN FIRM

ALMA CITY, WIS. The Stephenson Feed & Grain Co., Inc., has been incorporated at Alma City, Wis.

Boston Banquet

BOSTON — The Boston Grain & Flour Exchange's annual banquet will be held here Feb. 3 at the Hotel Somerset. A cocktail party has been scheduled from 6 to 7 p.m., followed by the banquet. Plans have been made for topflight entertainment after the banquet.

Visitors from the South, West and Canada are expected.

TURKEY CROP

(Continued from page 1)

tion would be light breed varieties as compared with 49% in 1954.

Turkey growers in the western states, a major commercial area, expect to decrease heavy breed turkeys by 4% and light breed turkeys by 8%, a decrease in total of 5%.

Intended decreases in heavy breed birds range from 1% in the east north central states to 14% in the south Atlantic states.

All parts of the country except the east north central plan decreases of 3 to 21% in light breed turkeys. The east north central region plans to increase light breeds by 1%.

(See the accompanying table for data on the various states and regions.)

Meanwhile, other government figures on testings of turkeys for pullorum disease show the potential for turkey production in 1955.

The number of heavy breed turkeys tested during December totaled 634,427, off 1% from a year earlier. However, for the July-December period, the total for heavy breed testings was 1,783,558—an increase of 4% from a year earlier.

Light breed turkeys tested during December totaled 72,291, unchanged from a year earlier. The number of light breed turkeys tested during July-December totaled 359,912—down 23% from a year earlier.

Government and industry officials have warned previously against another year of excess production in 1955, particularly in heavy breed birds.

Intentions to Raise Turkeys in 1955

State and division	Number raised 1954* Heavy breeds	Number raised 1954* Light breeds	Number raised 1954* Total	Intended for raising in 1955 Heavy breeds	Intended for raising in 1955 Light breeds	Intended for raising in 1955 Total	Total turkeys 1955 as % of 1954
	thousands			thousands			%
Maine	148	344	492	149	318	467	95
New Hampshire	139	9	148	130	10	130	88
Vermont	116	10	126	114	8	122	95
Massachusetts	622	62	684	549	67	616	90
Rhode Island	48	5	53	49	4	53	100
Connecticut	309	31	340	307	26	333	98
New York	928	92	1,020	882	87	969	95
New Jersey	275	92	367	253	103	356	97
Pennsylvania	880	916	1,796	840	687	1,527	85
North Atlantic	3,467	1,561	5,028	3,263	1,310	4,573	91
Ohio	1,361	907	2,268	1,557	938	2,495	110
Indiana	1,483	325	1,807	1,360	366	1,626	90
Illinois	737	162	899	763	145	908	101
Michigan	873	246	1,119	876	187	1,063	95
Wisconsin	1,116	745	1,861	1,081	782	1,863	100
East North Central	5,571	2,385	7,956	5,537	2,418	7,955	100
Minnesota	3,867	3,716	7,583	5,144	2,894	8,038	106
Iowa	3,652	498	4,150	3,966	392	4,358	105
Missouri	914	609	1,523	949	422	1,371	90
North Dakota	440	96	536	424	74	498	93
South Dakota	417	61	468	334	111	445	95
Nebraska	833	25	858	879	32	911	106
Kansas	645	123	768	611	142	753	98
West North Central	10,768	5,128	15,896	12,307	4,067	16,374	103
Delaware	177	144	321	48	193	241	75
Maryland	304	203	507	301	155	456	90
Virginia	1,637	3,480	5,117	1,556	2,305	4,861	95
West Virginia	713	952	1,670	727	776	1,503	90
North Carolina	851	213	1,064	638	160	798	75
South Carolina	987	356	1,325	771	263	1,034	78
Georgia	356	35	391	253	21	274	70
Florida	146	49	195	131	45	176	90
South Atlantic	5,156	5,434	10,590	4,425	3,918	9,343	88
Kentucky	313	78	390	316	80	396	102
Tennessee	173	43	216	150	35	191	90
Alabama	146	62	208	139	59	198	95
Mississippi	109	16	125	93	11	104	90
Arkansas	413	233	646	438	323	761	120
Louisiana	81	15	96	76	20	96	100
Oklahoma	386	291	677	443	206	649	96
Texas	2,682	589	3,271	2,591	541	3,042	93
South Central	4,302	1,315	5,607	4,166	1,277	5,443	97
Montana	123	17	140	119	13	132	94
Idaho	74	36	110	77	33	110	100
Wyoming	73	8	89	58	6	64	80
Colorado	715	80	795	697	68	765	95
New Mexico	49	9	58	46	9	55	95
Arizona	89	9	98	81	7	88	90
Utah	1,635	359	1,994	1,503	491	1,994	100
Nevada	10	1	11	11	...	11	100
Washington	699	299	998	854	144	998	98
Oregon	1,507	377	1,884	1,590	319	1,909	96
California	6,722	1,078	9,800	8,116	1,096	9,212	94
Western	13,696	2,273	15,968	13,122	2,986	16,208	95
United States	42,949	18,096	61,945	42,820	16,076	58,896	96

*Preliminary.

NUMBER OF CATTLE ON FEED GAINS

(Continued from page 1)

able increase in the number of heifers on feed. This represented 17% of the total this year, compared with 12% last year. Steers accounted for 56% of the total this year, compared with 57% a year ago; calves 26% and 29%; cows and other, 1% and 2%. Shipments of calves into feeding areas during the fall of 1954 are indicated to have been much heavier than the previous fall. Apparently many of these calves were on pasture and roughage feed about Jan. 1 and have not been started on grain rations.

Practically all of the increase in the number of cattle on feed was in the number that have been on feed less than three months. For the five states with comparable data, 80% of the total were on feed less than three months compared with 78% last year. For these same states, 18% have been on feed from three to six months, with only 2% on feed more than 6 months.

Cattle feeders intend to market fed cattle at a faster rate than intended a year ago, with 43% of the Jan. 1 number to be marketed by April 1.

Data on 14 States

Some detailed data also is available for 14 states having 87% of the Jan. 1 number of cattle and calves on feed. These states include the abovementioned five plus Ohio, Indiana, Minnesota, Missouri, South Dakota, Kansas, Texas, Colorado and Arizona.

For the 14 states, cattle on feed weighing under 600 lb. comprised 33% of the total number of cattle on feed. Cattle weighing 600-900 lb. were 45% of the total, while those weighing over 900 lb. were 22%. Steers represented 53% of total; heifers 18%; calves 27%; and other cattle, 2%.

About 78% of the total had been on feed less than three months, 20% had been on feed three to six months, while only 2% were on feed more than six months. Feeders intend to market 44% of their cattle during the next three months with 16% in January, 15% in February, 13% in March. The remaining 56% is expected to be marketed after April 1.

Cattle and Calves on Feed*

By States as of Jan. 1, 1955

State—	1954†	1955	%‡
	thousand head		
Pennsylvania	86	84	98
Ohio	164	164	100
Indiana	269	272	106
Illinois	550	572	105
Michigan	114	114	100
Wisconsin	104	108	104
E. N. Central	1,191	1,236	104
Minnesota	331	334	101
Iowa	1,103	1,174	106
Missouri	331	331	101
North Dakota	76	70	93
South Dakota	204	214	105
Nebraska	607	619	102
Kansas	210	227	105
W. N. Central	2,863	2,969	104
N. Central	4,054	4,205	104
Oklahoma	79	75	107
Texas	139	126	90
Montana	54	62	115
Idaho	110	135	123
Wyoming	35	30	86
Colorado	245	275	112
New Mexico	18	29	160
Arizona	100	169	169
Utah	53	57	108
Nevada	26	30	116
Washington	33	36	112
Oregon	32	36	113
California	350	407	132
Western	1,354	1,527	122
Total U. S.	5,394	5,816	108

*Estimates include only cattle being fattened for market as a more or less distinct agricultural enterprise, and excludes small operations incidental to dairy and general farming. Cattle thus fed are presumed to produce carcasses that will grade good or better.

In addition there have been a number of cattle finished on distillery slop, mostly in Kentucky, and on by-product feeds in other states not shown as well as large numbers being winter fed in West Virginia, Virginia and Kentucky and some other states to be marketed as grass fat in late summer.

†Revised.

‡1955 as a per cent of 1954.

OILSEED CROP SUPPORT OUTLOOK

(Continued from page 1)

Before CSS can announce this plan as its final decision, it will be necessary to clear the prospective levels of support with congressional leaders, but it is strongly suspected that the CSS team had good reasons to believe that the program can be sold to congressional leaders.

As with their decision to lower the price support lines for the small grain crops, CSS leaders are moving in a direction which ultimately should restore to the feed and oil markets a full measure of independence of trade and processing interests from the burdensome weight of overhanging stocks of oilseed meals and oils in a sterile government stockpile.

Frees Cottonseed Market

Primarily, the decision frees up the cottonseed product market as its first major effect. Cottonseed oil and cottonseed meal in government hands have been slowly strangling the cottonseed industry as it lost its markets to soybean oil and soybean meal. After a year of vigorous pushing, CSS cleaned out its stocks of cottonseed meal and is right now nearing the day when its stocks of cottonoil are exhausted.

In what appears to be an effort to equalize the competitive positions of the two major vegetable oils, it is understood that CSS will support the price of soybean oil at a level which would sustain the $2 per bushel support line for beans if the edible oil market should fall to a point where a general collapse of these markets was imminent.

CSS may be accused of making haste slowly. However, it is no secret that a slow retreat from supports is the strategy made necessary by overpowering political considerations. A complete dropping of all supports on all the oilseed crops is seen as too drastic a dose of bitter medicine at one time.

While the general pattern of government influence on the price support aspect of feed industry problems emerges from uncertainties, a still unsolved and also major condition remains to be solved. That is the use farmers will make of acreage removed from cultivation of cotton and wheat.

Farmer decisions obviously will be tailored by local conditions and individual arithmetic. Where land permits an alternative, some farmers will have to make a choice between oats and barley at 70% of parity and soybeans at a national average price of $2 bu. at the farm. That support level may be roughly estimated at between 70 and 72% of parity, depending on the calculation of the new parity price for beans available at the end of January.

A very considerable larger acreage will be removed from wheat and cotton land this year than last. On the basis of planted acres for crops in 1954, it is evident that, lacking controls over these diverted acres, many farmers selected the best pocket-book crop to cultivate on land removed from production of these basic crops.

Corn acreage allotments without the enforcement teeth of marketing quotas have been a fiction as a method of control. Consequently, it does not seem likely that soybeans can make any further invasion of the Corn Belt area, where corn will be supported at 88½% of parity while beans will obtain a price support level of $2 bu. national farm average.

At least the incentive to switch from corn to beans will be somewhat less than the attraction of 70% of parity for oats and barley as compared with beans at the now indicated price support level.

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Buffalo: Demand poor; trend unsteady; supply fair; $74.50, sacked, Boston.

Seattle: Demand slow; trend easy; supply good; 15% protein suncured $48 ton, 136,000 A unit dehydrated $70 ton, both delivered, carlots.

New Orleans: Demand fair; trend steady; supply tight; 17% dehydrated vitamin A guaranteed $68@69; non-guaranteed $62@63, 15% $56@57.

Cincinnati: Demand fair; trend dehydrated strong, fine suncured easy; supply adequate; 17% dehydrated, 100,000 vitamin A $74.50@77.50; 17% dehydrated, no A $62.50; 15% fine suncured $40@48.

Ft. Worth: Demand fair; supply critically short on high quality dehydrated for nearby, ample on suncured; dehydrated 100,000 A 17% $75.50; 17% no A guaranteed $62.40, Kansas-Nebraska origin, delivered Group 1, prompt; California origin, 100,000 A 17% $74.50@75, delivered TCP, February; suncured No. 1 13% ¼ in. $46.50@47.50, delivered Group 1.

St. Louis: Demand fair for dehydrated, suncured slow; supply of dehydrated limited, suncured ample; dehydrated, 17%, 100,000 A $69.50@70.50 ton; suncured, No. 1 fine ground, 13% $48 ton, f.o.b. St. Louis.

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A, burlap or papers, dry $67, greased $69.50; 17% dehydrated, non-A, burlap or papers, dry $53, greased $54.50; No. 1 fine ground suncured $45; No. 1 ¼ in. $40.

Milwaukee: Demand and supply fair; western suncured, 13%, Colorado $53, Kansas-Nebraska $47; 17% western dehydrated, with 100,000 A guarantee $67, without $60.

Indianapolis: Demand slow; trend unchanged to lower; supply ample; 13% $48, 17% $65.50.

Minneapolis: Prices moved up sharply this week on some types of alfalfa meal, reflecting a shortage of high vitamin A material for blending. The spread between non-guaranteed meal and guaranteed A content material has widened as a result. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $69.50@72.50, granules $74.50, oil-treated $75.50; 17% 50,000 units of vitamin A guaranteed $60.50, non-guaranteed $56; 15% suncured $48@49.

Philadelphia: Demand dull; supply light; 17% dehydrated $72.

Memphis: Demand light; trend down; supply adequate; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $71.75.

Portland: Demand slow; supply limited; trend unchanged to higher; 15% suncured $36, f.o.b. Idaho; 15% suncured $42, f.o.b. California; dehydrated $58, f.o.b. California.

Chicago: Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $69.50@70; 17% with no A guaranteed $59.50@60; 15% suncured with no A $53@53.50; 13% fine ground, suncured $47@47.50.

Boston: Demand slow; supply tight; dehydrated, 17% $74.75; suncured, 13%, Dakota $53, Colorado $56.50@56.65.

Kansas City: Trend continues on the stronger side with demand good and offerings only fair of more desirable quality; market remains only barely steady on non-guaranteed offerings; 17% dehydrated alfalfa meal with 100,000 units of vitamin A guaranteed on arrival $66@68, sacked, Kansas City; no A guarantee $51@52, sacked, Kansas City, in papers, burlaps to $1 ton less; No. 1 fine ground suncured $42.50@43, sacked, Kansas City; $39.50@40, sacked, Kansas City, for No. 1 ¼ in.

Los Angeles: Demand of suncured fair, dehydrated good; supply plentiful on suncured, dehydrated scarcer; 15% suncured $42, 17% dehydrated $54@54.50.

ALFALFA PELLETS

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A, bulk $67, sacked $69.50.

New Orleans: Demand fair; trend steady; supply adequate; $64@65 on 17% dehydrated, vitamin A.

BARLEY FEED

Ogden: Supply normal; rolled $49@54, whole barley $42@47.

Philadelphia: Demand dull; supply fair; pulverized $56.

Boston: Demand and supply light; domestic $56.

Baltimore: Demand quiet; supply fair; $54.

Milwaukee: Demand and supply fair; pulverized, white $51, feed $50; needles $1.14 bu.

Indianapolis: Demand fair; trend steady to lower; supply sufficient; whole $72, crimped $73, rolled $76.

Chicago: Demand quiet; supply fair; $45.

New Orleans: Demand slow; trend steady; supply adequate; $56@57.

San Francisco: Demand fair; supply ample; rolled $68, ground $64.

Portland: Demand good; supply ample; trend unchanged; rolled $66, ground $64.

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $3.20, standard ground $3.25.

Seattle: Demand fair; trend easy; supply good; whole $62 ton, ground $62 ton, rolled $65 ton, all ex-warehouse, sacked, f.o.b.

BLOOD FLOUR

New Orleans: Demand fair to slow; trend steady; supply adequate; $117.50@120.

Louisville: Demand slow; trend easy; supply ample to heavy; $112.50@115 ton, sacked.

BLOOD MEAL

Chicago: Demand fair; supply ample; $140@150.

Cincinnati: Demand fair; trend steady; supply adequate; $130@140.

New Orleans: Demand good; trend steady; supply ample; $117.50@120.

Seattle: Demand steady; trend firm; supply good; $100 ton, f.o.b. local packing plants, l.c.l.

Louisville: Demand slow; trend easy; supply heavy; $112.50@115 ton, sacked.

San Francisco: Demand and supply fair; $6.25 a unit of ammonia; screened $6.15 a unit of ammonia.

Portland: Demand good; supply ample; trend unchanged; $135.

Los Angeles: Demand fair; trend steady; supply ample; $5.75 a unit of ammonia.

BONE MEAL

New Orleans: Demand good; trend steady; supply limited; $85@87.50.

St. Paul: Market stronger; demand good; supply limited; $98 in large lots.

Ft. Worth: Demand good; supply sufficient; $85, sacked, f.o.b. Ft. Worth.

Louisville: Demand fair; trend easy; supply normal; $75@80 ton.

San Francisco: Demand good; supply fair; $55.

Omaha: Demand strong; supply limited; $92.50.

BONE MEAL (STEAMED)

Cincinnati: Demand fair; trend steady; supply short; $95@100 ton, sacked, f.o.b. Cincinnati.

St. Louis: Demand good; supply adequate; $97.50@100 ton, sacked.

Indianapolis: Demand slow; trend weak; supply plentiful; $92 ton.

New Orleans: Demand good; supply limited; trend stronger; $75@80, ex-dock.

Seattle: Demand steady; trend strong; supply limited; $95 ton, ex-warehouse, l.c.l.

Chicago: Demand and supply fair; $75@80.

Louisville: Demand slow; trend easy; supply normal; $80@85 ton.

San Francisco: Demand good; supply ample; $75.

Boston: Demand quiet; supply tight; $80.

Los Angeles: Demand moderate; trend stronger; supply limited; $89.50, domestic.

Ft. Worth: Demand unsatisfied; supply very limited; best quality German production 72% B.P.L., 14% phosphorus, 31% calcium $74@75, 100-lb. paper bags, ex-dock, Houston, February arrival.

BREWERS' DRIED GRAINS

Philadelphia: Demand dull; supply fair; $67.50.

Cincinnati: Demand poor; trend lower; supply adequate; $62.50@63.

Louisville: Demand fair; trend easy; supply good; $60 ton.

Milwaukee: Demand and supply fair; 26% $58.50@60.

St. Louis: Demand good; supply limited; $55 ton bulk, $60 ton sacked.

Chicago: Demand slow; supply good; 24% $56.50@57.

Buffalo: Demand and supply fair; trend unsteady; $61.50, bulk, Boston.

New Orleans: Demand fair; trend firm; supply improving; $62@65 on 24 to 26%.

San Francisco: Demand fair; supply ample; $59.50.

Boston: Demand fair; supply tight; 26% $67.25@69.

Ft. Worth: Demand slow; supply sufficient; 24% $63@64, prompt, delivered Ft. Worth.

BREWERS' DRIED YEAST

Buffalo: Demand slow; trend steady; supply adequate; $10 cwt.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11¼¢.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11¼¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

St. Louis: Demand good; supply limited; 9% @10¼¢ lb. in carlots, 10% @11¢ lb. in ton lots, 11¼ @12¢ lb. less than ton lots.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10¼@11½¢ lb. in carlots; 10% @13½¢, l.c.l.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¾@12½¢, l.c.l.

Omaha: Demand good; supply poor; 11½¢ lb., carloads; 12½¢ lb., less than carloads.

Louisville: Demand fair; trend steady; supply ample; $200 ton.

Boston: Demand slow; supply adequate; 11½¢ lb.

BUTTERMILK-CONDENSED

San Francisco: Demand fair; supply good; $6.25 cwt.

Louisville: Demand good; trend firm; supply normal; $6.25 cwt.

Chicago: Demand fair; supply adequate; $3.50@3.75 cwt. in carlots.

Ogden: Supply normal; $4.15, 100-lb. drum.

Boston: Demand and supply fair; cwt. $3.85.

Philadelphia: Demand dull; supply fair; $4 cwt.

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $6.25; in large barrels $6.50.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $13.24, flour $9.42.
Buffalo: Crystals $13.96, flour $10.20.
Toledo: Crystals $15.52, flour $11.77.
Boston: Crystals $14.27, flour $10.62.
Limecrest, N.J.: Crystals $9.50, flour $5.74.

CALCIUM CARBONATE

Minneapolis: Plain $10; iodized (⅛ lb. KI per ton) $13.50; iodized-manganesed $15.05.

Chicago: Plain $8.55 ton in 100-lb. bags, delivered.

Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Los Angeles: Demand fair; supply ample; trend unchanged; meal and flour $10.52 ton in carloads; grits $13.02 ton in carloads.

CHARCOAL

Boston: Demand and supply light; $75.

San Francisco: Demand steady; supply ample; $59.50.

Chicago: Demand quiet; supply ample; poultry charcoal $92 ton in 50-lb. multiwalls.

New Orleans: Demand quiet; trend steady; supply ample; 40-lb. bags oak charcoal $1.90; 50-lb. bags poultry $2.10.

Los Angeles: Demand poor; trend unchanged; supply ample; oak $90 in 40-lb. bags.

COCONUT MEAL

San Francisco: Demand fair; supply ample; $68.

Portland: Demand good; trend higher; supply limited; $75, ex-dock.

Seattle: Demand slow; trend strong; supply limited; $72 ton, ex-dock, 30-day shipment from Philippines.

Los Angeles: Demand moderate; trend strong; supply limited; cake, ex-dock $79 @80; cake, off-shore $79@80.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply good; 400 D, 2,250 A 22¢ lb.; 200 D, 2,250 A 21¢; 200 D, 1,500 A 18½¢.

CONDENSED FISH SOLUBLES

Boston: Demand quiet; supply scarce; 5¢ lb.

Los Angeles: Demand fair; trend unchanged; supply ample; 5¼@5½¢.

CORN GERM MEAL

St. Louis: Demand good; supply limited; $54 ton bulk, $59 ton in burlap bags, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis; bulk basis $5 less)

Minneapolis: Feed $61.77, meal $80.77.
Atlanta: Feed $68.92, meal $87.92.
Birmingham: Feed $67.18, meal $86.18.
Boston: Feed $66.15, meal $85.15.
Chicago: Feed $56, meal $75.
Cleveland: Feed $63.04, meal $82.04.
Denver: Feed $65, meal $84.
Ft. Worth: Feed $63.50, meal $82.50.
Indianapolis: Feed $60.50, meal $79.50.
Kansas City: Feed $56, meal $75.
Louisville: Feed $62.11, meal $81.11.
New Orleans: Feed $64.88, meal $83.88.
New York: Feed $65.69, meal $84.69.
Norfolk: Feed $65, meal $84.
Philadelphia: Feed $65.23, meal $84.23.
Pittsburgh: Feed $63.50, meal $82.50.
St. Louis: Feed $56, meal $75.

CORN OIL MEAL

New Orleans: Demand slow; supply adequate; trend stronger; $61@63.

Louisville: Demand slow; trend weak; supply normal; $61.81 ton.

Cincinnati: Demand fair; trend lower; supply adequate; $63.81.

COTTONSEED OIL MEAL

Chicago: Demand slow; supply good; hydraulic $82, solvent $80.

Cincinnati: Demand poor; trend steady to easy; supply adequate; $80.50@82.

Buffalo: Demand poor; trend uncertain; supply fair; $88.85, sacked, Boston.

Seattle: Demand steady; trend firm; supply good; 41% expeller process $88 ton, 41% solvent process $84 ton, both delivered, carlots.

New Orleans: Demand fair; trend firm; supply ample; 41% $88@88.50.

Ft. Worth: Demand very limited; supply sufficient; carlots, central and north Texas origin, 41% old process $78@79; solvent, 41%, low gossypol $75@76, delivered Ft. Worth; pellets $2 additional.

Indianapolis: Demand only fair; trend downward; supply sufficient; $8@8.50 ton.

Louisville: Demand fair; trend easy; supply normal; old process $79.85; no new process quoted.

Memphis: Demand dull; trend down; supply plentiful; prime 41% protein, old process $71.50, sacked; new process, 41% solvent $70, sacked.

San Francisco: Demand good; supply ample; $72.50.

Portland: Demand good; trend higher; supply limited; $75, f.o.b. Los Angeles.

Ogden: Supply average; 41% $78@83.

Omaha: Demand good; supply ample; 41% solvent $83, pellets $85.50.

Kansas City: Demand fair; offerings satisfactory; market trend about steady to slightly easier on the solvent types; $71.50 @72 for old process; $69.50@70, sacked, Memphis, for solvent.

Boston: Demand fair; supply adequate; $86@88.50.

Philadelphia: Demand dull; supply fair; $86.50.

Wichita: Demand moderate; supply sufficient; 41% old process $83; 41% solvent $79.

Los Angeles: Demand moderate; trend strong; supply limited; $73@75.

Atlanta: Demand fair; trend steady; supply ample; 41% $78, sacked, immediate.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@13¢; 2,000 ICU 18¢, warehouse.

Kansas City: Demand fair; trend steady; supply adequate; 10⅛@11¢ lb.

A AND D FEEDING OIL

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 10¼@11¼¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Buffalo: Demand steady; supply adequate; 300 D, 750 A 19¢ lb.; 300 D, 1,500 A 21¢ lb.; 300 D, 2,250 A 24¢ lb.; 300 D, 3,000 A 27¢ lb.; 600 D, 4,000 A 32¢ lb.; straight vitamin A feeding oil 10⅛@11½¢ per M. U., drum lots, drums included, basis Buffalo.

Milwaukee: Demand and supply fair; 85 D, 100 A $1.57; concentrated vitamin oils, 300 D, 750 A 23¢; 300 D, 1,500 A 26¢; 300 D, 2,250 A 29⅝¢.

Minneapolis: All with DPPD—straight A feeding oil 13¢ per million; 85 D $1.18 gal.; 300 D, 760 A 18½¢ lb.; 300 D, 1,500 A 21¢ lb.; 300 D, 2,250 A 23¢ lb., single drum lots.

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 23¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., ex-warehouse, drums included.

Boston: Demand slow; supply good; 600 D, 1,500 A 18¢ lb.; 300 D, 2,250 A 20¢; 200 D, 1,500 A 17¢; 300 D, 750 A 15½¢.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Coronet, Fla.: 17% $56, 14½% $48.
Houston: $55.50.
Wales, Tenn.: $64.35.

DICALCIUM PHOSPHATE

Cincinnati: 18% phosphorus $75@77.

Portland: Demand good; supply ample; trend unchanged; $98.

St. Louis: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $84, f.o.b. St. Louis in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. St. Louis in 100-lb. multiwall bags.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 20% $80 net ton; freight equalized with closest production point, carload basis.

Minneapolis: 18.5% phosphorus $83.

Chicago: Demand fair; supply adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $74 net ton in 100-lb. papers basis Chicago Heights, Ill.; less than 20,000 lb. $79 net ton; 21% phosphorus 20,000 lb. or more $84 net ton, basis Chicago Heights and Nashville, Tenn., less than 20,000 lb. $89 net ton.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $84, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. Trenton in 100-lb. multiwall bags.

East St. Louis: Monocalcium or dicalcium phosphate, 18½% phosphorus $74 ton, bagged, f.o.b. cars.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Adams, in 100-lb. multiwall bags.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia in 100-lb. multiwall bags.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply tight; $68.

Louisville: Demand good; trend strong; supply light; production light; up $3 ton, bourbon light grains $69 ton, dark $71, solubles up $2 ton to $87.

New Orleans: Demand slow; trend steady; supply limited; $66@67.

Buffalo: Demand good; trend upward; supply fair; $77, bulk, Boston.

Boston: Demand active; supply short; dark $76.50@77.50.

San Francisco: Demand fair; supply ample; solubles $85.

DRIED BEET PULP

Cincinnati: Demand fair; trend steady; supply adequate; $53@58.

New Orleans: Demand quiet; trend steady; supply sufficient; $48@50.

Seattle: Demand good; trend firm; supply tight; $46.50 ton, delivered, carlots.

Buffalo: Demand and supply fair; trend steady; $60, sacked, Boston.

Milwaukee: Demand and supply fair; $52.75.

Ft. Worth: Demand quiet; supply sufficient; carlots, 50-lb. papers $61.50, delivered Ft. Worth, January shipment.

San Francisco: Demand good; supply fair; $46.46.

Ogden: Supply normal; $47@51.

Boston: Demand slow; supply short; $58.50.

Atlanta: Demand fair; trend steady; supply ample; $64.30, sacked, 50-lb. papers, January.

Los Angeles: Demand moderate; trend strong; supply light; $62@63 in paper bags.

DRIED BUTTERMILK

Ft. Worth: Demand limited; supply sufficient; local production $10 cwt., f.o.b. Ft. Worth.

Ogden: Supply average; $8.65, 100-lb. bag.

Minneapolis: Market steady at $12.50 cwt.

Indianapolis: Demand slightly off; trend unchanged; supply sufficient; $14 cwt.

Milwaukee: Demand good; supply light; $12 cwt.

Los Angeles: Demand fair; trend unchanged; supply ample; 9¾¢.

Louisville: Demand fair; trend steady; supply ample; $12@13 cwt.

San Francisco: Demand fair; supply ample; $9.75 cwt.

Wichita: Demand slow to fair; supply about offsets demand; $8.50 cwt.

New Orleans: Demand fair; trend firm; supply tight; in carlots $11@12 cwt.

Chicago: Demand fair; supply tight; $11.50@12.25 cwt. in carlots.

Buffalo: Demand light; trend steady; supply tight; $12.50 cwt.

Boston: Demand fair; supply short; 11¢ lb.

DRIED CITRUS PULP

Los Angeles: Demand good; trend unchanged; supply tight; f.o.b. southern California producer's plant; orange $45 sacked, $41 bulk.

Buffalo: Demand good; trend steady; supply fair; $58.50, sacked, Buffalo.

New Orleans: Demand good; trend steady; supply limited; $45@46.50.

San Francisco: Demand good; supply fair; meal $52.

Boston: Demand slow; supply light; $57.50.

Atlanta: Demand good; supply limited; trend strong; pulp $46.50, meal $41.50, sacked, immediate.

DRIED SKIM MILK

Los Angeles: Demand moderate; trend steady; supply tight; $14.50@15.

Cincinnati: Demand fair; trend steady; supply tight; 14@15¢.

Chicago: Demand fair; supply tight; $13.50@14 cwt. in carlots.

New Orleans: Demand fair; trend steady; supply ample; $11@12.75 cwt.

Milwaukee: Demand good; supply scarce; $12 cwt.

Minneapolis: Market steady at $13.50@14 cwt.

Buffalo: Demand fair; trend steady; supply adequate; $13.50 cwt.

Portland: Demand good; supply ample; trend unchanged; $19.25.

San Francisco: Demand and supply fair; 11¾¢ lb.

Louisville: Demand fair to good; trend stronger; supply fair; $14.50@15 cwt.

Philadelphia: Demand dull; supply fair; $12.50.

Boston: Demand fair; supply tight; 12¢ lb.

DRIED WHEY

New Orleans: Demand fair; trend steady; supply adequate; $6.75@6.80.

Seattle: Demand steady; supply ample; trend unchanged; $7 cwt., ex-warehouse, l.c.l.

Buffalo: Demand and supply fair; trend steady; $6.75 cwt., delivered.

Chicago: Demand fair; supply adequate; $6.75 cwt. in carlots.

Cincinnati: Demand and supply fair; trend steady; $6.75.

Los Angeles: Demand fair; trend steady; supply ample; fortified $7.40; unfortified $7.25.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6.75 cwt., sacked, delivered Ft. Worth or any Texas point, or in ton lots f.o.b. warehouse, Ft. Worth.

San Francisco: Demand steady; supply good; $7.25 cwt.

BOWMAN PRODUCTS

Bo-A and PROT-A
(Stable Dry Vitamin A Products)

Bo-DEE
Vitamins D-2 or D-3 in dry, oil or water dispersible forms

Bo-DEE MINERAL STABLE VITAMINS D
(Vitamin D that will not decompose when combined with minerals)

CLOROFOLEN
(Proven Dog Food Deodorant)

HYDROPOID
(Dry Hydrogenated Animal Fat)

PALATEAZ
(A Complete Line of Flavors for feeds)

XANTHOPHYLL CONCENTRATES
(For Greater Poultry Pigmentation)

Bowman Feed Products, Inc.
130 Central Ave., HOLLAND, MICH.

FEED INGREDIENTS
Fish Meal • Scrap • Solubles
Bigelow Sales Company
Produce Exchange Building
2 Broadway NEW YORK 4, N. Y.
Tel. HAnover 2-9195

Louisville: Demand fair; trend steady; supply ample; $7.25@7.50 cwt.

Portland: Demand good; supply ample; trend unchanged; $6.50.

Ogden: Supply average; $6.50, 100-lb. bag.

Kansas City: Demand moderate; trend unchanged; supply fair; straight grade $6.75 cwt.; partially delactosed $7.45 cwt.

Philadelphia: Demand dull; supply fair; $6.50.

Boston: Demand fair; supply good; 6¾¢ lb.

Minneapolis: Market steady at $6@6.75 cwt.

FISH MEAL

Atlanta: Demand fair; trend strong; supply limited; 60% $160.75, sacked, nominal, immediate.

Portland: Demand good; trend higher; supply limited; $2.40, f.o.b. Vancouver; $2.45, f.o.b. California.

San Francisco: Demand and supply fair; Canadian herring meal $2.55 a unit of protein.

Louisville: Demand slow; trend steady; supply ample; $160@165 ton.

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@173.

Boston: Demand active; supply tight; 58% $147, nominal.

Cincinnati: Demand fair; trend steady; supply tight; $160@165.

New Orleans: Demand fair; trend steady; supply limited; 60% menhaden $147.50@150.

Minneapolis: Market firm at $2.37½ a unit of protein for 70% Canadian herring meal, West Coast.

Indianapolis: Demand not so active; trend unchanged; supply plentiful; $172 ton.

Milwaukee: Demand and supply fair; 60% $173.

Los Angeles: Demand good; trend strong; supply light; $2.40@2.45 a unit of protein.

Ft. Worth: Demand fair; supply very limited; Angola 60% $151, f.o.b. truck or car, ex-dock Houston, prompt shipment.

Chicago: Demand fair to good; supply limited; menhaden fish meal, 60% protein, f.o.b. East Coast $147.50; 60% blended West Coast $145, nominally; Northwest herring-salmon blend $137.50@145, nominally; herring meal 72% protein $2.35 a unit of protein.

Seattle: Demand fair; trend firm; supply limited; Canadian herring meal $2.45 a unit protein, Seattle; blended and local productions $2.40 a unit protein.

Buffalo: Demand good; trend steady; supply limited; $150 ton, bulk; $153, sacked.

HAY

Los Angeles: Demand slow; trend steady; supply ample; U.S. No. 1 $32@33; U.S. No. 2 leafy $29@31; U.S. No. 2 green $29.50@30.50; U.S. No. 2 $27@29.

Ft. Worth: Demand fair for alfalfa, slow for other sorts; supply sufficient; carlots, baled, No. 1 alfalfa $48@50, No. 2 $46@48, Oklahoma origin; prairie No. 2 $37@39; Johnson grass, nominal, No. 2 $36@38, delivered TCP.

St. Louis: Demand slow; supply plentiful; timothy and clover mixed $32@34 ton, clover $28@32 ton; alfalfa, third, fourth and fifth cutting $30@35 ton; alfalfa, milling grades $23@25 ton; prairie $24@28 ton; straw $14@15 ton.

Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $29; first cutting No. 1 alfalfa $32, second cutting $37; fancy No. 1 clover and timothy $33.50; No. 1 red clover $32; bright wheat or oat straw $14@15.

Wichita: Demand good; supply insufficient; prairie $26, alfalfa $25@32.

Philadelphia: Demand dull; supply light; as to quality $32.

Ogden: Supply normal; $1.30 bale; $25@30 ton in the barn.

Boston: Demand fair; supply adequate; No. 2 timothy $38@40; second cutting alfalfa $60.

Seattle: Demand fair; trend steady; supply ample; $36 ton, delivered, truck lots for U.S. No. 2 green.

Buffalo: Demand steady; No. 2 timothy $18@19 ton; No. 2 alfalfa $26@28; straw $10@14.

New Orleans: Demand fair; trend steady; supply ample; timothy and clover $36@40, baled alfalfa $33@36, prairie $25@26.

Louisville: Demand slow; trend steady; supply ample; timothy, clover or mixed hay, No. 1 $35 ton, No. 2 $33; alfalfa, No. 1 $36, No. 2 $36; straw $14@15 ton.

HOMINY FEED

Buffalo: Demand fair; trend unsteady; supply good; $59.50, bulk, Boston.

Chicago: Demand very slow; supply plentiful; $53.50@54.

New Orleans: Demand light; trend steady; supply sufficient; $62@62.50.

Seattle: Demand fair; trend steady; supply ample; $60.50 ton, delivered carlots, sacked.

Indianapolis: Demand light; trend unchanged; supply sufficient; yellow $58, including state tags and used bags; white $59, ground corn $60 ton.

Milwaukee: Demand and supply fair; $54.50.

Cincinnati: Demand poor; trend steady to easier; supply adequate; $56.50@57.

Louisville: Demand and supply good; trend easy; $56 ton.

Memphis: Demand poor; trend steady; supply ample; white $55, yellow $55.

Omaha: Demand good; supply limited; $49.50, bulk; $55, sacked.

Boston: Demand and supply light; $64.

LINSEED OIL MEAL

Ft. Worth: Demand fair; supply sufficient; carlots, 36% expeller $89.82, February through March shipment, delivered Ft. Worth; pellets $2.50 premium.

Cincinnati: Demand and supply fair; trend steady; $83.75@86.

Los Angeles: Demand moderate; trend strong; supply light; $75.50@76.50, local, resale.

Philadelphia: Demand dull; supply fair; 34% $88.

Portland: Demand good; trend higher; supply limited; $76, f.o.b. Los Angeles.

San Francisco: Demand and supply fair; $80.

Minneapolis: The market was easier this week, with directions reported only fair. Quotations: 36% $67@68, bulk, Minneapolis, with some sales reported slightly lower.

Seattle: Demand slow; trend strong; supply limited; 34% protein $94 ton, 30% protein $90 ton, both delivered, carlots.

Chicago: Sales were fair on solvent type during the week ending Jan. 19, but feed manufacturers generally did only hand-to-mouth buying. Supplies continued plentiful for the most part. Quotations Jan. 19: solvent $78.50, expeller $83.50.

Indianapolis: Demand fair; trend unchanged; supply sufficient; new process $86, old process $88.

Milwaukee: Demand and supply fair; 34% $82.50, 36% $78.50.

New Orleans: Demand fair; trend steady; supply limited; 32% or higher $88.50@89.

Louisville: Demand good; trend stronger; supply normal; new process $84.35 ton; old process $89.85 ton.

Omaha: Demand good; supply ample; 32% expeller $85.50, pellets $88; 34% solvent $81, pellets $83.50.

Kansas City: Slow demand; offerings adequate; trend about steady at $67.50@68.50, bulk, Minneapolis.

Wichita: Demand fair; supply sufficient; 34% $85.

Boston: Demand slow; supply good; $88.46.

MALT SPROUTS

Cincinnati: Demand and supply fair, trend steady; No. 1 $64.

St. Louis: Demand good; supply adequate; No. 1 bulk $49.50@50 ton, No. 1 sacked $55 ton; No. 2 sacked $47.50@48 ton.

Milwaukee: Demand and supply fair; $55.

New Orleans: Demand poor; trend stronger; supply light; $62@63.

Chicago: Demand and supply fair; No. 1 $57.

Boston: Demand and supply light; $64.

MEAT SCRAPS

Chicago: Demand fair; supply ample; 50% protein $77.50@82.50; 55% $92.

New Orleans: Demand fair; trend steady; supply ample; 55% $85@95 local plants.

Omaha: Demand good; supply ample; $90.

Seattle: Demand good; trend firm; supply limited; $95 ton ex-warehouse, truck lots.

St. Paul: Prices off slightly to $90 for 50% meat and bone scraps.

St. Louis: Demand fair; supply ample; 50% $85@90 ton bulk, $89@94 in paper bags, $90@95 in burlap bags.

Milwaukee: Demand good; supply scarce; 50% $85.

Buffalo: Demand fair; trend stronger; supply ample; 50% meat scraps, $80 ton, bulk; $82.50 sacked.

Kansas City: 50% meat and bone scraps $85 sacked, Kansas City.

Wichita: Demand fair; supply sufficient; 50% $87.50 f.o.b. plant; 55% no quotations, no offerings.

Boston: Demand steady; supply good; $1.30 per protein unit; converted 50% $77.50.

Cincinnati: Demand fair; trend steady; supply adequate; 50% $84.50 ton, sacked, f.o.b. Cincinnati.

Fort Worth: Demand improved; supply sufficient; meat and bone, 50% $85@85, sacked f.o.b. or delivered Ft. Worth.

Louisville: Demand dull; trend weak; supply ample; $80@100 ton.

San Francisco: Demand good; supply ample; $1.95 per unit of protein.

Los Angeles: Demand good; trend strong; supply limited; $2@2.05 a unit of protein.

Portland: Demand good; trend higher; supply limited; $1.95.

MILLET

St. Louis: Demand fair; supply ample; recleaned Early Fortune $4.25 cwt., sacked; recleaned White Proso $4.75@5.25 cwt., sacked.

MILLFEED

Minneapolis: Demand was reported slow to fair, with list prices about unchanged from last week but some material available at 50¢@$1 ton below these levels. Some sources reported demand improved from last week, but others found buyers very indifferent. Quotations: bran $42@42.50, standard midds. $42@43.50, flour midds. $46@47, red dog $47.50@48.

Kansas City: Offerings have improved somewhat, particularly on shorts and prices on the finer offal have narrowed since last week; quotations Jan. 19, bran $40.50@41.

GROWERS, PROCESSORS, CARLOT SHIPPERS - - -

CERTIFIED SEED OUR SPECIALTY. For Sale — Seed Oats: 60,000 bushels certified Cherokee, 30,000 bushels certified Mo-0-205, 10,000 bushels certified Nemaha, 10,000 bushels certified Andrew, 10,000 bushels certified Clintafe, 5,000 bushels non-certified Bonham. Other varieties also available. Wire or Phone for Carlot or Truckloi prices.

SAND'S SEED SERVICE MARCUS, IOWA

CORN FLAKES • WHEAT FLAKES
Prepared Especially by Us for Dog Food Manufacturers Since 1942
Special Attention Given to L.C.L. and Truck Orders
KIEWIT FEED COMPANY
Offices—4025 Kenwood, Kansas City 10, Mo.—WEstport 2270
(Plant—Bonner Springs, Kansas)

FEED GRAINS
KAFIR-MILO
BARLEY - CORN - OATS - WHEAT
From Every Grain Producing Area in United States
CONTINENTAL GRAIN COMPANY

OFFICES:
New York, Chicago, Kansas City, St. Louis, Omaha, Columbus, Memphis, Norfolk, Nashville, Enid, Minneapolis, Louisville, Fort Worth, Buffalo, Toledo, Houston, Galveston, Portland, San Francisco, Vancouver, B. C., Winnipeg, Los Angeles

☆

TERMINAL ELEVATORS:
Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Galveston, Enid, Minneapolis, Norfolk, Nashville, Louisville, Memphis, Houston

shorts $44.75@45.25 sacked, Kansas City.

Omaha: Demand fair; supply good; bran $40.75, shorts $44.75, bulk standard midds. $41.75@43.

Wichita: Demand improved, with bran in stronger demand than shorts; supply about offsets demand; basis Kansas City, Jan. 18: bran $40@40.75, shorts $44@44.50, bran was unchanged to 25¢ ton lower, while shorts declined $2.75 ton, compared with the preceding week.

Fort Worth: Demand active for bran, fair for shorts; supply, bran offerings light, but sufficient on shorts; carlots, prompt, wheat bran $49, gray shorts $52@53 delivered, TCF; about $1.50 lower on both bran and shorts, compared with a week previous.

Chicago: Millfeed prices during the week ending Jan. 19 were about the same to $1 ton lower. Buyers continued to hold purchases down until feed business picks up. Quotations Jan. 19: Bran $45.50@46, standard midds. $46, flour midds $49.50, red dog $50@51.

Milwaukee: Demand fair; supply good; pure bran $47, standard midds. $48.

St. Louis: There was a little more action recently; supplies of bran ample, shorts scarce; bran $44.50@45, shorts $48.25@48.75, St. Louis switching limits.

Cincinnati: Demand fair; trend steady to lower; supply adequate; bran $50, midds. $51@51.50.

Indianapolis: Demand slow; trend steady to lower; supply sufficient; soft winter wheat bran $54, standard midds. $55, mixed feed $55, gray shorts $56.

Louisville: Demand good; trend easy; supply ample; Bran $49.90 ton; mixed feed $51.80; shorts $52.85; midds. $52.85.

Buffalo: Sales fair; bran moved up 50¢ ton but had difficulty in holding its gain; middlings were firmer and heavy feeds were unchanged. Quotations Jan. 19: Bran $49@49.25, standard midds. $50@50.50; flour midds, $51.50@53, red dog $51.50@53.

Boston: Demand slow; supply spotty; standard bran and midds. $57.

Philadelphia: Demand spotty, supply ample; bran $54.50, standard midds. $55.50, red dog $60.

New Orleans: Demand fair; trend steady to draggy; supply adequate; bran $50@51; shorts $53@54.50.

Memphis: Demand moderate; trend down; supply ample; wheat bran $47, gray shorts $50, standard midds. $49.

Seattle: Demand steady; trend firm; supply good; $46 ton, delivered, common transit points, carlots.

Portland: Demand good; supply ample; trend unchanged; $44.50.

Ogden: Supply normal; Utah and Idaho: Red bran and millrun $44, midds $49. To Denver: Red bran and millrun $51, midds. $56. To California: Red bran and millrun $51.50, midds. $56.50 f.o.b. San Francisco and Los Angeles.

San Francisco: Demand and supply fair; $53, red bran $58.

Los Angeles: Demand moderate; trend steady; supply ample; Mill run, Utah-Idaho billing, sacked $54; red bran, delivered CC points $57.50@58.50.

MINERAL FEED

Ft. Worth: Demand fair; supply ample; all purpose granules $85, block $95, mineral phosphorus 6% granules $93, block $108; cattle-sheep mineral, 7% phosphorus granules $96, block $104; hog mineral, phosphorus 3½% granules $36; phosphorus 2% $50. (All in 50-lb. paper bags.)

San Francisco: Demand steady; supply good; all purpose with iodine $70.

Portland: Demand good; trend unchanged; supply ample; $42.

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Omaha: Demand and supply good; $85 sacked, $95 blocks.

Seattle: Demand steady; trend unchanged; supply ample; $54 ton for high phosphorus mixtures, $38 ton for competitive brands.

Wichita: Demand good; supply adequate; all-purpose with iodine 50-lb. blocks $92.50, 100-lb. bags $87.50, f.o.b. plant.

MOLASSES

Buffalo: Demand good; trend steady; supply good; 12¢ gal., f.o.b. Albany

Seattle: Demand steady; trend unchanged; supply good; $18 per ton f.o.b. Seattle, tank car lots.

Indianapolis: Demand fair to good; trend firm; supply normal; 10¢ gal., tank cars, f.o.b. Gulf ports.

Milwaukee: Demand fair; supply ample; blackstrap 10½¢ gal., New Orleans.

New Orleans: Demand fair; trend steady; supply adequate; 10¢ gal. in tankcars, f.o.b. New Orleans.

Minneapolis: Market steady at 10¢ gal., f.o.b. New Orleans; $18 ton, West Coast.

Kansas City: Generally 10¢ gal., New Orleans, with 9¾¢ freely quoted for resale immediate and January.

Boston: Demand steady; supply adequate; 12¢ gal. in tankcars.

San Francisco: Demand and supply good; $18 ton f.o.b. cars, Richmond, Cal.

Los Angeles: Demand good; trend steady; supply ample; $18, f.o.b. tank cars, Los Angeles Harbor; $18.25 f.o.b. tank trucks Los Angeles Harbor.

Cincinnati: Demand fair; trend steady; supply adequate; 9¾@10¢ gal., New Orleans.

Fort Worth: Demand fair; supply ample; blackstrap 10½¢ gal, f.o.b. Houston; carlots, delivered Ft. Worth, cars and/or truck, $36.57, seller's market price on date of shipment; maximum 11½¢ January through March.

Louisville: Demand fair; trend steady; supply normal; 10¢ gal. in tank car lots, f.o.b. New Orleans.

Portland: Demand good; trend unchanged; supply ample; $18.

Memphis: Demand moderate; trend steady; supply ample; blackstrap, 10¢ gal., tank cars, f.o.b. New Orleans.

Atlanta: Citrus molasses—demand good; supply limited; trend strong; $16, f.o.b. Florida prdoucing points.

OAT PRODUCTS

Philadelphia: Demand dull; supplies fair on pulverized, light on oatfeed; pulverized white oats $60; Canadian oatfeed $36 nominal, domestic $29.

Boston: Demand steady; supply good; white pulverized $55; reground oat feed $27.50.

Memphis: Demand poor, trend lower; supply ample; 3½% protein, reground oatfeed $24.80.

Minneapolis: Improved interest was shown this week, possibly as a forerunner of spring demand. Prices were somewhat easier. Quotations: poultry rolled oats $94@95, standard pulverized $53.50, feeding oatmeal $83, reground oat feed $20@23.

Indianapolis: Demand fair; trend mixed; supply ample; pulverized white oats $60, pulverized mixed oats $53.50, fine ground oatmeal $97, crimped white oats $75, rolled white oats $105, No. 2 white reclaened oats $1.05 bu., sacks extra.

Milwaukee: Demand and supply fair; pulverized, white $52, feed $50; molasses oat feed $35; reground oats, 2% $21, 5% $22.50.

St. Louis: Demand fair; supply ample; reground oat feed $19.50 in 100-lb. burlap bags; pulverized white oats $50 ton, choice $51.

Cincinnati: Demand and supply fair; trend steady to higher; reground oats $23.50@25; pulverized white oats $55@57; rolled oats $99@104.

Portland: Demand good; supply ample; trend unchanged; rolled $68, ground $64, cleaned $65.

Louisville: Demand fair; trend easy; supply ample; reground $24.25, rolled oats $99.85, feeding oatmeal $91.85, crimped white oats $76.35, pulverized $67.35.

Los Angeles: Demand dull; trend steady; supply ample; pulverized white $72.50.

Seattle: Demand fair; trend steady; supply good; feed oats $68 ton, ground oats $69 ton, rolled oats $71.50 ton, all ex-warehouse, L.c.l.

Chicago: Demand fair; supply good; reground oatfeed $18@19; fine ground feeding oatmeal $86@88; feeding rolled oats $92@95.

New Orleans: Demand good; trend steady; supply ample; pulverized white oats $60@65.50; coarse or medium oats $58@60, mixed feed oats $53.50@55.50.

OYSTER SHELL

New Orleans: Demand fair; trend steady; supply ample; $16@16.50 local origin.

Seattle: Demand steady; trend unchanged; supply good; eastern $32, western $28, both per ton, ex-warehouse, L.c.l.

Louisville: Demand good; trend steady; supply normal; $19.30 ton.

Portland: Demand good; supply ample; trend unchanged; western $29, eastern $34; granite and crystal grits, both $26.

Los Angeles: Demand fair; trend steady; supply ample; local $18.50, eastern $25.

San Francisco: Demand fair; supply ample; local $18, eastern $24.

Boston: Demand and supply steady; in paper $31.44.

PEANUT OIL MEAL

New Orleans: Demand fair; trend steady; supply adequate; 45% $85@86.50.

Milwaukee: Demand and supply fair; 26% $58; 45% $85.

PEAT MOSS

Chicago: Demand good; supply scarce; $3.80@3.95 standard 7½ cu. ft. bale.

New Orleans: Demand fair; trend steady; supply ample; 150-lb. bales German moss $3.10@3.30.

Philadelphia: Demand good; supply fair; $3.05, f.o.b. pier.

Boston: Demand steady; supply adequate; $2.65@2.75 in carlots; l.c.l. $2.85@3.10 bale.

Los Angeles: Demand fair; trend steady; supply ample; German, ex-dock $3.20 in 1,000-bale lots, $3.30 in 100-bale lots.

San Francisco: Demand fair; supply ample; $3.15 bale.

POTASSIUM IODIDE, U.S.P.

St. Louis: Demand fair; supply adequate; 100% pure potassium iodide, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92, 25-lb. lots in drums $1.95, 5-lb. bottles $2.11, 1-lb. bottles $2.32; 90% potassium iodide calcium stearate mixture, 225-lb. lots in leverpak drums $1.81, 200-lb fiber drums $1.81, 100-lb. lots in fiber drums $1.83.

RICE BY-PRODUCTS

San Francisco: Demand good; supply fair; bran $53, polish $60.

Ft. Worth: Demand unsatisfied; supply very scarce; carlots, rice bran $47@48, prompt, f.o.b. south Texas rice mills; hulls $4@5, f.o.b. mills.

Los Angeles: Demand moderate; trend stronger; supply scarce; bran $54.

New Orleans: Demand good; trend stronger; supply scarce; bran $45@46, Louisiana origin.

Memphis: Demand fair; trend down; none available; bran $45 (nominal), sacked, f.o.b. Arkansas points.

Atlanta: Demand fair; trend strong; supply limited; bran $58.50, sacked, February.

SCREENINGS

Minneapolis: Demand remains limited, but supplies are not pressing and domestic screenings are quoted within the same ranges as last week. Canadians lost $1 ton. Quotations: country run $28@33, lights $18@25, mediums $26@32, heavies $33@43; Canadian $26.50, bulk, Duluth; Canadian ground $37, sacked, Duluth; flax screenings $34.

COTTONSEED OIL MEAL FUTURES

Closing prices of cottonseed oil meal (41% protein) on the Memphis Merchants Exchange in dollars per ton (bulk):

	Jan. 14	Jan. 17	Jan. 18	Jan. 19	Jan. 20
January	....@ 65.75	65.00@ 66.00	65.25@ 66.50	....@ 65.50	64.50@ 65.50
March	....@ 64.50	64.00@ 65.00	....@*64.10	....@ 64.25	64.20@ 64.75
May	64.25@ 64.50	64.00@ 64.50	64.00@ 64.25	....@ 64.00	63.75@ 64.50
July	64.00@ 64.50	63.50@ 65.00	63.75@ 64.00	63.75@ 64.50	63.00@ 64.00

*Sales.

SOYBEAN OIL MEAL FUTURES

Closing prices of soybean oil meal (basis Decatur, Ill.) on the Chicago Board of Trade and on the Memphis Merchants Exchange, in dollars per ton (bulk basis):

CHICAGO

	Jan. 14	Jan. 17	Jan. 18	Jan. 19	Jan. 20
January	....@ 66.70	....@ 66.65	....@ 67.25	67.00@ 67.40	65.25@ 65.80
March	....@ 64.25	....@ 63.95	64.60@ 64.75	....@ 65.00	64.25@ 64.60
May	63.40@ 63.50	....@ 63.40	63.60@ 63.90	63.75@ 63.80	62.80@ 63.00

MEMPHIS

	Jan. 14	Jan. 17	Jan. 18	Jan. 19	Jan. 20
March	62.30@ 63.00	62.10@ 62.50	62.50@ 63.00	62.50@ 63.25	62.00@ 62.60
May	61.75@ 62.25	61.75@ 62.00	61.75@ 62.50	61.75@ 62.50	61.50@ 62.50
July	61.00@ 62.00	61.00@ 62.00	61.00@ 62.00	61.00@ 61.75	60.50@ 61.25
August	61.00@ 61.75	61.00@ 62.00	61.00@ 62.00	61.00@ 61.75	60.00@ 61.25
September	58.00@ 59.00	58.00@ 60.00	58.00@ 60.00	58.00@ 60.00	58.00@ 59.00
October	....@*52.00	....@*53.00	....@*53.00	....@*53.00	....@*52.00
December	....@*52.00	....@*53.00	....@*53.00	....@*53.00	....@*52.00

*Sales.

MILLFEED FUTURES

The following is a comparison of settling prices at Kansas City for Jan. 14 and 21:

Bran—	Jan. 14	Jan. 21
January	$40.00@ 40.40	$....@ 41.25
February	....@ 41.00	....@ 41.00
March	41.90@ 42.50	....@ 42.35
April	43.10@ 43.25	43.35@ 43.75
May	39.50@ 41.25	40.75@ 41.50
June	37.50@ 39.50	39.25@ 40.00
Shorts—		
January	$44.75@ 45.25	$....@ 45.75
February	....@ 44.10	....@ 44.00
March	45.00@ 45.50	45.15@ 46.25
April	45.75@ 47.00	46.60@ 47.50
May	45.50@ 46.00	46.60@ 46.75
June	45.50@ 46.00	46.00@ 46.75

Buffalo: Demand and supply fair; trend steady; ground, sacked $41, New York; unground, bulk $31.75, New York.

New Orleans: Demand fair; trend fairly steady; supply adequate; 3/64 in. grind $50@52.

Chicago: Demand slow; supply short; ground grain screenings $38.50@39.50; Canadian, bulk $29.50@30.

Cincinnati: Demand and supply fair; trend easier; Canadian $36, barley $35, both bulk, delivered.

SORGHUMS

Cincinnati: Demand and supply fair; trend steady to easier; $3.05@3.07.

Los Angeles: Demand fair; trend steady; supply ample; No. 2 milo, Arizona, 35¢ rate, bulk, prompt $2.97½ cwt.; No. 2 milo, delivered CCP, bulk, prompt $3.12½ cwt.

Ft. Worth: Demand dull; supply sufficient; carlots, bulk, No. 2 yellow milo $2.65@2.70, delivered Texas common points.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Chicago: $22, carlots.
Kansas City: $21.50@22, carlots.
St. Louis: $21.10@21.50, carlots.
Des Moines: $22.25@22.50, carlots.
Philadelphia: $21.25@21.50, carlots.
Minneapolis: $22.75, carlots.

SOYBEAN OIL MEAL

Decatur: Demand and supply fair; 44% bulk, unrestricted $66@67.

Chicago: Sales were fair for nearby delivery, but the majority of buyers continued to purchase only hand-to-mouth. The slow formula feed situation was thought to be a factor. Quotations Jan. 19: 44% protein, unrestricted $76@77.50.

New Orleans: Demand slow; trend easier; supply ample; 44% $84@84.50.

Seattle: Demand steady; trend easy; supply good; $93.50 ton, delivered, sacked, carlots.

KRA-KER-JAX
now contains
STILBESTROL
Regular KRA-KER-JAX Still Available
Sweeten Your Feed
WITH
KRA-KER-JAX
Contains 55% Molasses, Yet Mixes Readily with Grains
√ Will not cake or get hard.
√ Dresses the complete feed and keeps dust down.
√ Makes complete feed more palatable.
√ Furnishes more sugar at less cost.
WRITE or Phone for Prices Delivered to Your Station or Truck Lots, f.o.b. Our Mill.
FEEDERS SUPPLY & MFG. CO.
1304 UNION AVENUE KANSAS CITY, MISSOURI
Also Available at:
Coe Seed Co. 212 Kansas Ave. Topeka, Kansas
Stockyards Supply Co. 721 East 21st St. Wichita, Kansas
Alley Grain Co. 302 Messanie St. St. Joseph, Mo.

KEES & COMPANY
National Distributors for W. C. PRATT CO.
Producers of
Triple Fifty • FISH SOLUBLE PRODUCTS • Thrifty "30"
327 S. La Salle St., Chicago 4, Ill. Phone HArrison 7-1528

BURROWS EZE-MOVE
BULK SCALE

• EASY ROLLING
• SELF DISCHARGING
• BREAK EQUIPPED
Equipped with 1,000 lb. capacity Fairbanks-Morse scale—weighs down to the ounce as the material is handled—eliminates hopper scales and stops at floor scales—ruggedly built—gravity discharge—unit shown above has 18 cu. ft. capacity—other sizes available. You'll Save Both Time and Money with the EZE-MOVE.
WRITE FOR ILLUSTRATED FOLDER
BURROWS EQUIPMENT COMPANY
1316 c Sherman Avenue • Evanston, Illinois

C. C. Smith

D. G. Chase

BEMIS APPOINTMENTS—C. C. Smith has been appointed plant merchandiser for the Buffalo plant of the Bemis Bro. Bag Co., and D. G. Chase has been named sales manager for the Buffalo Sales Division. Mr. Smith will be responsible for merchandising products manufactured by the Buffalo plant; Mr. Chase will be responsible for the sale of all Bemis products in the Buffalo territory, regardless of where they are manufactured. Mr. Smith joined Bemis in 1906 at St. Louis where he worked in the order department. In 1914 he went to Indianapolis as a salesman, and transferred to Buffalo in 1924. He was made sales manager in 1939. Mr. Chase joined the company as a salesman at Minneapolis in 1940 and transferred to Buffalo in January of 1954. Bemis also has announced that J. T. Trotter has been named sales manager of the Bemis multiwall paper bag plant at East Peppercil, Mass. He replaces R. B. LeRoy, who has taken over new responsibilities with the company. C. C. Cobb has been appointed resident manager of the firm's St. Louis paper specialty plant. He was formerly sales manager for the 3-plant paper specialty organization of the company.

Indianapolis: Demand slow; trend downward; supply normal; $80, sacked, in ton lots.

Milwaukee: Demand good; supply fair; old crop, 41% $80.50, 44% $79.50.

Wichita: Demand fair; supply sufficient; 44% $80, f.o.b. Wichita.

Minneapolis: Prices slipped back further as demand remained quiet. Quotations: $59 @ 69.50, bulk, Decatur.

"SNOW-FLAKE"
OYSTER
SHELL

Gorton's
BLENDS
AL-FISH
•
MAR-VI-TIC
•
TURKEY

FOR POULTRY, PIGS and TURKEYS

Produce superior quality feeds fortified with all vitamin and protein factors . . . INCREASE YOUR SALES . . . GET MORE SATISFIED CUSTOMERS.

BY ADDING Gorton's BLENDS

You can save money by replacing costly vitamins and proteins . . . Cut down on man hours of handling, mixing and weighing . . . conserve on storage costs . . . lower inventory investment.

Gorton's Vitamin Oils
Triple Tested for GUARANTEED Potencies

Write, wire or phone for prices and further information

NEW ENGLAND BY-PRODUCTS CORP.
177 Milk Street Boston 9, Mass.

Kansas City: Trend a little lower; demand fair; offerings adequate; for Kansas City and West $62@63, bulk, Decatur; unrestricted $66.50@67, bulk, Decatur.

Omaha: Demand good; supply ample; 44% $79, pellets $81.50; 41% $82.

Boston: Demand fair; supply plentiful; $64@65.

Portland: Demand slow; trend lower; supply ample; $61@62.

Atlanta: Demand fair; trend slightly stronger; supply ample; 44% $84.50, sacked, immediate.

Louisville: Demand fair; trend easy; supply ample; $77.81 ton.

Los Angeles: Demand good; trend steady; supply ample; $92.87@92.97, delivered CCF.

San Francisco: Demand fair; supply ample; $94.82.

TANKAGE

Ft. Worth: Demand good; supply adequate; 60% digester $97@100, f.o.b. Ft. Worth.

Los Angeles: Demand fair; trend steady; supply ample; $1.95 a unit of protein.

Kansas City: 60% digester $90, sacked, Kansas City.

Wichita: Demand fair; supply sufficient; 60% $95, f.o.b. plant.

Omaha: Demand good; supply ample; $97.50.

Chicago: Demand fair; supply ample; 60% protein $85@94.

Milwaukee: Demand good; supply light; 60% $95.

St. Louis: Demand fair; supply ample; 60% $95@100 ton bulk, $99@104 in paper bags, $100@105 in burlap bags.

St. Paul: Market steady at $95 for 60% digester.

WHEAT GERM MEAL

New Orleans: Demand fair; trend steady; supply adequate; $66@68.

Buffalo: Demand fair; trend steady to upward; supply poor; $69.50, sacked, f.o.b. Buffalo.

Chicago: Market steady at $66.

DRY MILK SALE

(Continued from page 1)

and the food sale price of the dried milk.

The limited quantity of this CCC inventory of not more than 10 million pounds is seen as being most likely available for calf starter feed manufacturers and for pig starters.

CSS officials say that recently dry skim milk and other dairy by-products for animal feed have surged upwards, and CSS officials believe they can move their stocks into consumption without disrupting the current market for this type of dairy by-product.

USDA Policy

This action confirms repeated reports in Feedstuffs that the broad over-all policy at USDA is to establish and maintain a favorable feeding relationship between feeds and the grain consuming animal units.

With a renewal of sales of dairy product surpluses for exclusive feed industry use at reduced prices, it is important that all feed manufacturers and others who wish to participate in this program remember that failure to comply with the time use limitations of the CSS contract of sale will be subject to enforcement of a cash penalty between the reduced sales price and the re-sale price of this product for food purposes. This penalty would represent between 3½ and 4½¢ lb. if use limitations were not met by purchasers.

CSS officials say that brokers and others are eligible to participate in purchases of this commodity if they certify they will comply with USDA contractual requirements.

Price Details

Price details on this product are as follows: In carlots dried milk will be sold to feed manufacturers and others for use in manufactured feeds in the states of North and South Dakota, Nebraska, Kansas, Missouri, Iowa, Minnesota, Wisconsin, Illinois, Indiana, Ohio, and Michigan at 11½¢ lb. delivered. In all other states the delivered price will be 12½¢ lb.

Terms and conditions of sale under this program are being sent directly to the trade from the CSS office at Cincinnati, Ohio, in Announcement LD-14. The terms are approximately the same as those in the previous dried milk program except for the much reduced use-limitation period in which the product must be incorporated in a manufactured feed.

N. W. CONVENTION

(Continued from page 3)

000 in surplus. Benefit will also be provided by relief from "double taxation" of earnings and dividends, he said.

Mr. Bird said that investment in new equipment will be encouraged by the granting of accelerated depreciation allowances on assets acquired after Jan. 1, 1954. A discussion in various tax deadlines was led by Mr. Rapaport.

Increasing Sales

"Increasing Sales for Profits," another panel discussion on the morning of Jan 17, was a topic debated by A. L. Larson, Madison (Minn.) Milling Co., chairman; Merrill Burgess, Burgess-Beckwith Co., Minneapolis; Carl Luther, Archer-Daniels-Midland Co., Minneapolis, and Harold Hayes, Fuller & Smith & Ross Advertising, Chicago.

"Your neighbors are your assets," said Mr. Burgess, and "direct mail advertising is merely an invitation to your neighbors to do business with you. It's up to you to treat him right if he's to stay as a customer," he continued.

"Talk to your prospect in your direct mail in terms that will interest him," Mr. Burgess added.

Mr. Luther stated that a "sales room is a must for every feed store" and that it should be at least 30x30 ft., or 900 sq. ft. Then, having a sales room, "let the farmer see everything you have in stock by displaying it prominently, letting him touch it, and marking it plainly with a description and price," he concluded.

An enterprising feed dealer will keep up-to-the-minute records—when a customer has hogs farrowing, when he will buy his baby chicks and when a large number of cattle will freshen, said Mr. Hayes. This opens the door for extra business. Feed dealers have the reputation for spending less for advertising than their retailer neighbors, Mr. Hayes said, and this neglect cannot lead to a good sales job.

"What About Stamps, Premiums and Gimmicks?" was the topic of another panel discussion in which the following participated: Joseph Donovan, Donovan, Inc., Albert Lea, Minn., chairman; C. A. Philips, Commander Elevator Co., Minneapolis; George Kolb, Jr., Belgrade (Minn.) Flour Mills Co., and Clifford J. Olson, Glencoe (Minn.) Mills, Inc.

A panel on animal and poultry nutrition was the highlight of the morning program Jan. 18. A report on this discussion will appear in next week's issue.

The date of the 1956 conference was set for Jan. 16-17. It will again be held at the Hotel Nicollet, Minneapolis.

DEHYCO
Better Processed Corn Cobs
John J. Clay Sales Co.
Victor 1188
Board of Trade Bldg., Kansas City, Mo.

GROWERS, PROCESSORS, CARLOT SHIPPERS - - -

CERTIFIED SEED OUR SPECIALTY. For Sale—Seed Soybeans: 30,000 bushels certified Hawkeye, 30,000 bushels non-certified Hawkeye, 5,000 bushels certified Lincoln, 5,000 bushels certified Adam, 2,000 bushels certified Clark. Wire or Phone for Carlot or Truck-lot prices.

SAND'S SEED SERVICE MARCUS, IOWA

We have manufactured
Huber's Multi-Cell Live Yeast Culture
for 25 Years
Used in feeds throughout the country
For sample and quotation write:
HUBER YEAST PRODUCTS CO.
P. O. BOX 334 WATERLOO, IOWA

J. H. LEFTWICH & CO., Inc.
BLACKSTRAP MOLASSES
Phone 2-8771 Mobile, Ala. P.O. Box 78
Savannah, Ga. Jacksonville, Fla.
New Orleans, La. Corpus Christi, Texas
Tuscaloosa, Ala. Cincinnati, Ohio
Nebraska City, Neb.
Shipments by Rail Tank Car, Truck Transports and Barge

"THERE ARE 3 REASONS I'm glad I'm an Archer Dealer"

Archer Research keeps me ahead of competition. My customers know they can depend on Archer to bring them every new, proven development in feeding. You'll see what I mean when you look over the complete Archer line. To me it's the most versatile, up to date feed line in the business.

Feed Quality Control. It's the only feed I've ever handled that customers buy for quality. And I found that Archer doesn't trust that quality to hit and miss production. You see, 95% of all ingredients in a typical bag of Archer feed have been *made* by Archer. Quality controlled in Archer Mills.

A Well-Balanced Line—part of which is Archer's high powered concentrates—helps me get extra customers. I can appeal to farmers who prefer the economy of using local grain and custom mixing . . . my own brand of feed made from Archer Concentrates . . . or those who prefer ready mixed Archer supplements.

"THESE ARE JUST A FEW OF THE REASONS I'M GLAD I'M AN ARCHER DEALER, AND WHY I FEEL ARCHER IS HELPING ME TO BUILD A SOUND, PROFITABLE BUSINESS."

Archer BOOSTER FEED

Super-treated with BOOSTRYN

ARCHER-DANIELS-MIDLAND CO.

Feed Division Sales Offices:

MINNEAPOLIS, MINN. KANSAS CITY, MO.

Ford Patterson

Ford Patterson Heads National Alfalfa Sales

KANSAS CITY—At a meeting of the directors of the National Alfalfa Dehydrating & Milling Co. in Kansas City Jan. 14, John R. Porter, chairman of the board, announced the election of Ford Patterson as vice president in charge of sales of the company. Mr. Patterson will continue to make his headquarters at the company general sales offices in Kansas City.

Mr. Patterson started with the company in 1933 in Tracy, Calif., mill of the company, sacking meal. He advanced to other positions and was transferred to Dundee, Mich., and later to the St. Louis sales office as a clerk.

In 1943, Mr. Patterson joined the armed forces and upon discharge in 1946 went back to the Dundee branch. Next year, he operated a company mill at Sterling, Colo., and in 1948 moved to the company headquarters at Lamar, spending some time in the laboratory on quality control work.

Mr. Patterson then was transferred to sales work and after five years in Lamar moved to the St. Louis sales office, traveling extensively in the eastern states. On the retirement of R. E. Nye in 1953, he was put in charge of the St. Louis office, and moved to Kansas City in August, 1954, when the general sales office was set up there.

Production of Feed In Canada Shows Gain

WINNIPEG — The November production of prepared stock and poultry feeds in Canada amounted to 234,259 tons, up from the preceding month's 207,398 tons.

Production of primary or concentrated feeds rose to 25,349 tons from 19,891 in October and secondary or finished feeds to 160,888 tons from 139,003.

STRADER-HUGHSTON MOVES

DALLAS — The Strader-Hughston Co. has moved its offices to quarters in its new warehouse on Coit Road between Forest Lane and Valley View Road, north of Dallas. The firm's address is Route 7, Coit Road. Ralph Strader, Tom H. Hughston and J. D. Smith are associated in the business, which handles feed ingredients and milling and ginning machinery.

F. P. SPENCER MOVES

MINNEAPOLIS — F. P. Spencer, Cargill, Inc., has been transferred from Minneapolis to Chicago, where he will assist in merchandising the products from the company's Chicago soybean processing plant. He previously was engaged in merchandising products of Cargill's western soybean plants.

MARKETS

(Continued from page 2)

this week, with grade A's going at around 30¢ doz. in the country. Further advances could encourage better feeding.

Some government reports this week provided outlook information of value to feed men. Minnesota turkey growers plan to increase their production by 6% this year. This is an opposite trend from the U.S. as a whole, with 4% reduction indicated by intention reports. Hatchery production of poultry in Minnesota was 4% larger in December than in December, 1953.

The number of cattle on feed in the western Corn Belt was 4% larger on Jan. 1 than a year ago. Iowa showed a 6% increase, Nebraska was up 2%, South Dakota up 5%, and Minnesota up 1%. North Dakota, however, showed an 8% decrease. Numbers in the whole U.S. were up 8% from last year.

Southwest

The feed business hit a snag over most of the Southwest this week, with numerous mills reporting the slowest sales period in many months. Dullness traditionally can be expected in January, but the vacuum which the industry hit this week was somewhat surprising.

A general snowstorm which engulfed most of the states except the extreme South put a crimp in dock business, and a number of mills reported truck sales the slowest of the winter. On the other hand, a snow cover could be expected to heighten supplementary feeding of range cattle and dairy herds.

While broiler prices have made a good recovery, many feeders are well stocked with feed supplies. Thus, demand for broiler feed is only fair. The same situation holds for egg feeds and dairy items. Interest in chicks in the South is starting to develop, but it is still too early to expect a great feed demand from this source. Hog feeds have been moving in fair volume.

With warehouses fairly well filled, slow dock business and only moderate carlot movement, mills averaged only three or four days this week in this area. Drouth feed interest continued to supply some running time in various sections but failed to help the slow demand of regular items. Prices were on an easier trend, with declines of 50¢ to $1 reported.

Northeast

Sales of formula feed were a bit better than a week ago. Dairy feed sales are still gaining and carrying the ball for the entire market. However, demand for poultry feeds has revived, and the market is showing some signs of life.

Poultry prices have gone up 3¢ lb., and this has quickened farmers' interest in poultry feeds. They probably will put in more replacements now that the market has turned firmer. But some farmers may face a delay in obtaining chicks because hatcherymen are not yet convinced that the market is on a sound basis, and they have been producing chicks only for customers with firm orders. Egg prices were little changed during the week.

Cash corn was about steady, futures were lower but strength in the cash crop overcame the lower options. Oats followed a similar pattern. Brewers' grains prices were off $1.50. Gluten feed and gluten meal were unchanged. Distillers grains were strong and scarce. Soybean oil meal was off $1 ton after being lower earlier in the week. Cottonseed oil meal was about unchanged, and linseed oil meal held steady.

Meat scraps and tankage were unchanged. Fish meal was steady. Alfalfa was steady, but sales were not too heavy because Vitamin A oil and dry hay are attractively priced competitors.

Millfeed sales were fair last week. Bran was up 50¢ ton but appeared to have difficulty in holding the gain. Middlings were firmer and heavy feeds were unchanged. Some mixers reported a tapering off in business.

Mill running time averaged about 40 hours last week. One mill was down on Jan. 17, but extra running time of other mills made up the difference.

Southeast

Although it was felt that feed demand would probably pick up in the Southeast after the first of the year, so far this has not happened. The feed trade has been complaining this week about slack sales for the month of January.

The broiler market is in much better shape pricewise, which will probably encourage additional chick placements, but it will take a while for demand from this source to be felt by the feed trade in any great degree.

Feed manufacturers continue to follow the pattern of buying for spot shipment only, with little or no interest in deferred positions. This would seem to indicate that they are experiencing this type of demand from their customers. With the financing situation such as it is in the broiler business, some reports say that many small cash buyers were cleaned out by the recent price declines and are not back in business yet.

This area has had some cold and wet weather this week, and this may help dairy and other livestock feed demand. There is still good demand for low-priced roughages, and some locally-produced feed ingredients are in short supply.

The supply of citrus pulp has improved somewhat, and producers are better able to meet the demand from customers for this ingredient.

Central States

Formula feed business continued in the doldrums during the week ending Jan. 19 in the central states' area. Continued mild weather in the area was not conductive to much protein feeding, and also low farm returns were not improved for the period.

Cattle feeds appeared to be the best movers, in spite of the weather, although dairy feed trade was very slow. Hog feed sales continued very well, although manufacturers were looking for a downward turn in the near future. Broiler business was down, due to low broiler replacements.

Feed prices were the same as a week ago in most cases. A few mills were forced to either cut down on production shifts or revert to a four-day week.

It was generally agreed by feed manufacturers that little improvement in demand for feeds could be expected before March.

Ohio Valley

Despite a prolonged spell of cold weather in the Ohio Valley, along with snow flurries and generally disagreeable weather conditions, formula feed sales continued this week in the low volume which has been recorded during the many past weeks.

Most in demand have been hog feeds, followed by broiler and dairy feeds, but none of these has moved in sufficient tonnage to indicate any near-term business improvement.

Despite this depressed situation, manufacturers in this area continue to express optimism regarding business in the weeks ahead, although definite factors in support of this optimism are not too evident. Apparently, the feeling has developed that the business pendulum has swung about as far in one direction as it can and now is about set to reverse its movement and swing the other way. Certainly, the over-all business picture, and the almost unanimous

INDEX OF ADVERTISERS

Abbott Laboratories 19, 20, 21, 22
Albemarle Paper Mfg. Co. 33a, 39
Albers' Milling Co. .....
Albumina Supply Co. .....
Allied Mills Inc. .....
Amburgo Co. .....
American Agricultural Chemical Co. .....
American Cyanamid Co. 18a, 19a
American Dehydrators Assn. 5a
American Elevator & Grain Division .....
American Mill Service Co., Inc. .....
Anderson Box Company .....
Andersen, V. D., Co. .....
Angle American Mill Corp. .....
Arcady Farms Milling Co. .....
Archer-Daniels-Midland Co. 66
Arco Dehydrating Co. 16a
Arid-Aire Grain Dryers .....
Arkell & Smiths 80
Armour & Co. .....
Arnold Dryer Co. 30a
Aubrey Feed Mills .....

Baker, H. J., & Bro. .....
Barker, Moore & Mein Co. 50
Bartlett, The C. O., & Snow Co. 21a
Bates Grain Co. 23
Baughman Manufacturing Co., Inc. .....
Baxter, A. E., Engineering Co. .....
Bayou Molasses Co. .....
Beermann Brothers Dehy. 6a
Bemis Bro. Bag Co. 45
Berg Bag Co. .....
Bigelow Sales Co. 63
Black, Sivalls & Bryson, Inc. 11a
Blatchford Calf Meal Co. 36
Blomfield-Swanson .....
Bonewitz Chemicals, Inc. .....
Borden Company 17
Bosworth Commission Co. .....
Bowman Feed Products, Inc. 63
Bradley & Baker 31
Bremco Alfalfa Mills, Inc. .....
Brewers Yeast Council, Inc. .....
Britton, V. C., Co. 21a
Brower Manufacturing Co. 6a
Bryant Engineering Co. 34a
Burrows Equipment Co. 40, 64
Burrus Feed Mills .....
Butler Manufacturing Co. 14a, 15a

Calcium Carbonate Co. 40
Calcium Products Co. 10
California Pellet Mill Co. 32a
Caple, A. B., Co. .....
Cargill Inc. 35
Champion Portable Mill Co. 10
Chantland Mfg. Co. 38
Chase Bag Co. 4
Checkerboard Elevator Co. 30
Citrus Processors Assn. 41
Clay, John J., Sales Co., Inc. 65
Clodne, Herbert K. 14
Colby Milling, Inc. .....
Columbia Phosphate Co. 54
Columbia Quarry Co. 29
Columbian Steel Tank Co. .....
Commercial Solvents Corp. 9
Consolidated Blenders, Inc. 37
Continental Distilling Corp. 57
Continental Grain Co. 63
Corn Products Refining Co. .....
Coronet Phosphate Co. 16
Cosby-Hodges Milling Co. .....
Coshocton Farmers Exchange .....
Crete Mills 4

D. C. A., Inc. .....
Daffin Manufacturing Co. .....
Dannen Mills, Inc. 66
Dawe's Laboratories, Inc. 40, 53
Dawson County Feed Prod., Inc. 27a
Day Company, The .....
Dayton Bag & Burlap Co., The .....
Des Moines Oat Products Co. 52
Devold, Peder, Oil Co. .....
Diamond V Mills, Inc. .....
Distillation Products Industries 55
Distillers Feed Research Council .....
Dixie Machinery Mfg. Co. 16a
Doane Agricultural Service, Inc. 26a
Doane Feed Products Co. 6
Doty Technical Laboratories 7a
Douglas Chemical Co., Vita-Vex Div. 35
Dow Chemical Co. .....
Dreyer Commission Co. 52
Dunbar-Kapple, Inc. 38
Duplex Mill & Mfg. Co. 39
Du Pont de Nemours & Co. .....

Early & Daniel Co. .....
Eastman Chemical Products, Inc. .....
Edwards Milk Products Co. .....
Elk Valley Alfalfa Mills, Inc. .....
Entoleter Division .....
Eschenheimer, Rudy, Co. .....
Eshelman, John W., & Sons 28a
Esmueller Co. .....
Ewing, Ray, Co. 12, 16, 28, 35, 38, 46, 54
Exact Weight Scale Co. .....
Excelsior Milling Co. .....

Farmer Feeder Co., Inc. 59
Farmers Friend Mineral Co. .....
Faultless Milling Co. 59
Faust, Henry K. 29
Feed Associates, Inc. .....
Feeders Supply & Mfg. Co. 64
Feedstuffs .....
Fischbein, Dave, Co. 26a
Flambeau Milling Co. 34
Flavor Corp. of America 44
Food Research Laboratories, Inc. 38
Forster Mfg. Co. 23a
Fox Co. 18
Fruen Milling Co. 7
Fulton Bag & Cotton Mills 18

Gabrielson Foods .....
Gainer Mills, Inc. .....
Gas Atmospheres, Inc. 3a
General Distributing Co., Inc. .....
General Mills, Inc. 49
Godshalk Sheet Metal Fabricators 59
Goodrich, B. F., Chemical Co. 36
Gorton-Pew Fisheries 65
Grace Chemical Co. 30
Gruendler Crusher & Pulverizer Co. .....

Hales & Hunter Co. .....
Half Moon Mfg. & Trading Co., Inc. .....
Hallenbeck Inspection & Testing Lab. .....
Hallet & Carey Co. .....
Hammond Bag & Paper Co. 43
Hand, Peter, Foundation .....
Hardy, H. E., & Co. .....
Hardy Salt Co. .....
Harris-Crane, Inc. .....
Harshaw Chemical Co. 50
Haugen Dehydrating Co. 11a
Hayes & Stolz Manufacturing Co. 54
Heck, Edward J., & Sons Co. 14a
Heil Co., The 30a
Herring Sales Co. 9a
Hess, Dr., & Clark, Inc. 12
Heyman Co., The 41
Heywood & Rabb, Inc. 59
Hiawatha Grain Co. .....
Highway Equipment Co., Inc. 40
Hilltop Laboratories 24
Hoffman-Taff, Inc. 43
Hogg, N. D., Ltd. 38
Holt Products Co. .....
Honeggers' & Co. 38
Howes, S., Co., Inc. .....
Hubbard Milling Co. .....
Hubbell, Charles H. .....
Huber Yeast Products Co. 65
Hughes, D. E., Co. 8a
Hygeno Litter Co. .....

Ibberson, T. E., Co. .....
Industrial Molasses Corp. 36a
International Minerals & Chem. Corp. .....
International Paper Co., Bagpak Div. .....
International Salt Co. .....
Iowa Limestone Co. .....

J-M Trading Corp. .....
Jacobson Machine Works 58a
Jersee Co. 30
Jones Electric Machinery Co. 34a
Joseph, I. S., Co., Inc. .....

Karr & Company 7
Kasco Mills, Inc. .....
Katz, Max, Bag Co. 34
Kees & Company 64
Kellogg, Spencer, & Sons, Inc. 56
Kent, Percy, Bag Co., Inc. 30
Keystone Steel & Wire Co. .....
Kiewit Feed Co. 62
Kindstrom-Schmeil Company .....
Koelsch, Charles J., Grain Co., Inc. .....
Kraft Bag Corp. .....

Laboratory Construction Co. .....
Laboratory of Vitamin Technology .....
La Budde Feed & Grain Co. 40
Landby Dehydrating Co. 6a
Larvacide Products, Inc. .....
Lassen Process 11
Lauhoff Grain Co. .....
Lee, Geo. H., Co. 23
Leftwich, J. H., & Co., Inc. 65
Le Gear, Dr., Medicine Co. .....
Lima Armature Works, Inc., The .....
Limestone Products Corp. of America 34
Lindfors Chemical Co. .....
Lockhart Ranch 30a
Loncais Phosphate Co. 10

McCabe Grain Co., Ltd. 29
McMillen Feed Mills .....
Magnus, Mabee & Reynard, Inc. .....
Mallinckrodt Chemical Works .....
Maney Bros. Mill & Elev. Co. 4
Mann, The Howard, Co. 9a
Marco Chemical Co. 33a
Markley Laboratories .....
Martenis, C. J., Grain Co. .....
Martin, Theo. W., & Son .....
Mayo Shell Corp. 14, 54, 59, 65
Merck & Co., Inc. 32, 33
Merrithew, Bill, Co. 16
Metal Katcher Co., Inc. .....
Meyer, O. W., Laboratories .....
Mid-Continent Grain Co. 30
Midvale Chemical Co. .....
Milbrew Co. .....
Miller Alfalfa Co. .....
Miller Manufacturing Co. .....
Minneapolis Sewing Machine Co. 26a
Minnesota Linseed Oil Co. 12
Minnesota Specialty Co., Inc. .....
Mitchell, Hutchins & Co. 47
Monsanto Chemical Co. .....
Moore Dry Dock Co. .....
Morris-McAdams Co. .....
Morton Salt Co. .....
Mowat, Wilson & Co. .....
Mullin & Dillon Co. .....
Murphy Products Co. .....
Myers-Sherman Co. 27a, 28a

Nagel, Herman, Co. 47
Natl. Alfalfa Dehydrating & Mig. Co. 20a
National Cottonseed Prod. Assn. .....
National Distillers Products Corp. .....
National Molasses Co. 7
National Oats Co. .....
National Renderers Assn. 8a
National Vitamin Products Co. .....
Neff & Fry Co. .....
Neills Feed Co. 46
Neumond Co. 22a
New Century Co., The 35
New England By-Products Corp. 65
New York Quinine & Chem. Wks., Inc. .....
Nichols Poultry Farm .....
Nigh, W. H., & Co. 44
Nitrogen Division .....
Nootbaar, H. V., & Co. 36
Nopco Chemical Co. 13
North Am. Trading & Import Co. Inc. 10
North Carolina Granite Corp. 41
North East Feed Mill Co. .....
Norwood Manufacturing Co. 52
Nutrena Mills, Inc. 35

O. & M. Seed Co., The .....
Oyster Shell Products Corp. 49

Pabst Brewing Co. .....
Pacific Molasses Co. .....
Paper-Calmenson & Co. 25a
Park, Philip B., Inc. .....
Parks, J. P., Co. 6
Parrish, N. K. .....
Parrish & Heimbecker .....
Pay Way Feed Mills, Inc. 47
Penvey, F. H., & Co. 46
Peerless Equipment Co. .....
Perry, J. Lawrence .....
Pfizer, Chas., & Co., Inc. 25, 26, 27, 28
Phenix Foods Co. 17a
Phillips, The Thomas, Co. .....
Piehl's Alfalfa Mill .....
Pillsbury Mills, Inc. 14
Pittsburgh Plate Glass Co. 54
Pizer & Sheahan .....
Pope Testing Laboratories, The 38a
Potomac Poultry Feed 45
Prater Pulverizer Co. .....
Premier Peat Moss Corp. 43
Publicker Industries, Inc. 57

Quaker Oats Co. .....
Quisenberry Mills .....

Raleton Purina Co. 24
Rapids Machinery Co. 61
Raymond Bag Co., The .....
Red River Alfalfa Co. .....
Reliance Feed Co. .....
Reyher Milling Co., The 4a
Richardson, James, & Sons .....
Richardson Scale Co. 60
Richmond Mfg. Co. .....
Riley Feed Co. 33
Rohloff Brothers, Inc. .....
Rural Dehydrators 10a
Ryde & Co. .....

St. Regis Paper Company .....
Salsbury's, Dr., Laboratories 51
Sands Seed Service 63, 66
Sargent & Co. .....
Scanlan, Ivan, & Co. .....
Scheuley Distillers .....
Schreiber Mills, Inc. .....
Schuster Feed Co. .....
Schutte Pulverizer Co. .....
Scroggins Grain Co. 30
Sea Fep .....
Seavey and Flarsheim Brokerage Co. 50
Security Mills, Inc. .....
Sedberry, J. E., Inc. 4a
Seedburo Equipment Co. 44
Seiders, Eugene L., Co. 22a
Shellbuilder Co. 20a
Shirling Alfalfa Mills 37a
Shuford, J. C., Co. 9a
Sievert, C. W., and Associates 35
Silmo Chemical Corp. 34
Simonsen Mfg. Co. 47
Sinason-Teicher Inter-American Grain Corp. 16
Sioux Alfalfa Meal Co. 14a
Small, The W. J., Co. 5
Soft Phosphate Research Inst., Inc. 47
Southern Equipment Co. .....
Southern Oyster Shell Mfg. Corp. 12
Southwell Grain Corporation .....
Southwest Mill Supply Co. 59
Specifide, Inc. .....
Spencer Kellogg & Sons, Inc. 56
Sprout, Waldron & Co., Inc. 12a, 13a
Stabilized Vitamins, Inc. .....
Staley Milling Co. 10
Standard Brands, Inc. 14
Standard Molasses Co. .....
Stivers, Theo. .....
Stone Mountain Grit Co. 33
Strong-Scott Mfg. Co. 15
Sunset Feed & Grain Co., Inc. .....
Superior Feed Co. .....
Superior Separator Co. .....
Swanson, Carroll, Sales Co. 16
Swift & Co. 10
Swift's Hatcheries .....
Syntha Laboratories .....

T. D. F. Company .....
Tamme Industries .....
Technical Service Laboratory 11a
Thompson-Hayward Chemical Co. 18

Ubiko Milling Co., The .....
Ultra Life Laboratories, Inc. 33
Union Special Machine Co. .....
United Distributing Co. .....
United Mineral Products Co. 12
U. S. Industrial Chemicals Co. .....
Universal Grain Corporation .....

Van Camp Laboratories .....
Van Dusen Harrington Co. 40
Virginia-Carolina Chemical Corp. .....
Vitality Mills .....
Vitamins, Inc. 56
Vita-Vex, Inc. 35
Vy Lactos Laboratories, Inc. 52

W-W Grinder Corporation 10a
Wallace & Tiernan Co., Inc. .....
Walsh Grain Co. 59
Ward Feed Co. .....
Warren-Douglas Chemical Co., Inc. 10
Warren Feed & Grain Co. 4a
Waterloo Mills Co. .....
Weller B. I., Co. 59
Wells, Ralph, & Co. 59
Wenger Mixer Co. 31a
Western Condensing Co. 34
Westgate-Calif. Tuna Packing Co. .....
White, Bob 9a
White Laboratories, Inc. 20a
Whitmoyer Laboratories, Inc. 14, 60
Williams, H. E., Mill Supply Co. 26a
Williamsen, John W., & Sons 28a
Wilson & Co. .....
Winston Laboratories .....
Wisconsin Alumni Research Foundation 46
Woods, John J., & Sons 16a

Zellers' Laboratories 54

predictions of a rising national economy this year, should be reflected sooner or later in the formula feed industry.

Formula feed prices remained steady this week, and there were no changes in mill operations, which are continuing at the low level of only about 50% of capacities.

Pacific Northwest

The formula feed business continued quiet. Most mills reported that their inventories are sufficient to take care of them for the time being, so trading of ingredients was rather slow.

Reports from the farming areas indicate that there is still a lot of grain, particularly barley, which has not yet been sold or placed under loan. The farmers want to move it into storage under loan or sell it, but all public storage is jammed. Farmers will want to clean out their own storage before a new crop comes along, and thus there is a feeling in the trade that some period in the next few months will see some lower-priced, if not distress, grains offered to the trade. This, of course, is making feed men cautious in their forward commitments on grains.

The proteins, with the exception of soybean meal, continue strong, but recent advances in fish meal, cottonseed meal, and linseed meal have discouraged buyers, and there is little or no forward booking. Millfeed continues steady, with demand and supply about in balance. The hay market is draggy, with prices unchanged for the past 30 days and no active buying interest.

Formula feed prices, which declined a bit at the turn of the year, have moved back up due to higher prices for several of the proteins. Weather continues about normal for this time of the year, but there has not been any snow or sub-freezing weather as yet. A cold spell may be expected at any time during the next six weeks to two months, but since no one is anticipating this development the chances are that colder weather would stimulate business only briefly, if at all. Feed men continue to complain of the lack of volume in all lines, with dairy feed more nearly holding its own than any of the other types of formula feeds.

"Dannen means business... MORE business for wide awake feed dealers!"

DANNEN

IN THEIR OWN WORDS, here's why Dannen has meant more business for these three feed dealers:

Clayton Gurney—Riverton Grain Co., Riverton, Nebraska

"I've been a Dannen Dealer for a good many years now, so I know what kind of an outfit they are. Dannen just never lets up—they're pushing all the time! I'm mighty glad that the Dannen Dealer in this town is me, instead of somebody else!"

Frank Isch—Morrill Elevator, Morrill, Kansas

"There's one thing about Dannen's selling program that I like best—that's the *Farm Tours*. Dannen has the best research farm in this part of the country, and my customers like to go there. They see living proof, at the Dannen Research Farm, of the kinds of results you get with Dannen Feed. It always means more business for me!"

Bill Toler—Hart-Bartlett-Sturtevant Grain Co., Carrollton, Mo.

"Of course I like everything about the way Dannen sells—their farm resale, for instance, works fine in my territory. But I especially like the *Dannen 4-H Club Plan*. We're really doing something for the kids—teaching them profitable feeding practices. And its meant more business for me!"

DANNEN CAN MEAN MORE BUSINESS FOR YOU, TOO!

DEALERSHIPS AVAILABLE

Write today for complete information

DANNEN

DANNEN MILLS, INC., ST. JOSEPH, MO.